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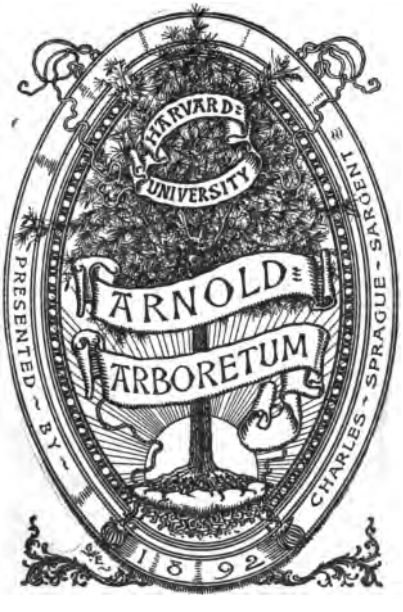

Dr. F. Franceschi.

Santa Barbara Exotic Flora:

A HANDBOOK OF

Plants from Foreign Countries

GROWN AT

SANTA BARBARA, CALIFORNIA.

SANTA BARBARA,
1895.

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TABLE OF CONTENTS.

Climatic Peculiarities of Santa Barbara.
The Palms.
The Bamboos.
Decorative Plants.
Fruit Bearing Trees.
The Conifers.
Evergreen Shade Trees.
Deciduous Trees.
Flowering Shrubs.
Climbers.
The Roses.
Bulbous and Tuberous Rooted Plants.
Herbaceous Perennials.
Orchids and Ferns.

To the Ladies of Santa Barbara

These Pages

Are Respectfully Dedicated.

ADV 2635

Above other cities in Southern California, Santa Barbara is acknowledged to enjoy the privilege of having had from the earliest date, the largest number of settlers impressed with intense love for plants and for flowers, and to possess in her gardens the most remarkable and older specimens of trees from foreign countries. Now that by the happy ripening of events, and by joined efforts of her best citizens our town is arising to new life, it is thought advisable that a complete review may be made of what has been accomplished here up to this date, in the line of introducing plants from abroad. This will form an interesting contribution to the history of our town and will be a fair tribute to the enterprise of early settlers, leading at the same time to suggestions of further progress, and above all a most exhaustive reply it will be to numberless inquiries concerning our climatic conditions.

Santa Barbara lies 34 deg. 26 min. latitude, by 119 deg. 43 min. longitude north, and precisely on that portion of the Pacific Coast where this, changing its normal direction takes a course from west to east, lasting about seventy miles. Out of the eight hundred odd miles that the coast of the State of California is stretching, this is the only section facing due south, and receiving moreover further protection from northern influences by the Santa Ynez mountains, 3,000 to 4,000 feet high, running parallel to the coast a few miles inland. Some thirty miles off in the ocean, another range is running in about the same

direction, of which the emerged portion forms the islands of San Miguel, Santa Rosa and Santa Cruz, which are acting as a regular barrier against heavy winds and heavy seas from the south, so that the channel between the islands and the mainland well deserves the name of Pacific.

It has been remarked since long that the peculiarities of the climate of California must be dependent to a great extent upon the influences of the ocean currents, and recent observations have proved that the surface cold water current, running along the coast from north to south, is submerged west of the Santa Barbara islands, the water temperature in our channel being from five to ten degrees higher. This, of course, does not fail to have influence on the climate of the adjoining mainland.

The nature of the soil is sure to have its influence, too. The Santa Ynez range appears to belong to the postpliocene formation, sandstone forming the backbone of the mountains, with occasional strata of limestone and clay. The foothills are literally covered with debris torn from their flanks, and while very few, if any, stratifications of rock are to be found there, an immense number of boulders, some of them of gigantic dimensions, are scattered all over on their surface, or at a feeble depth underneath. Evidently these boulders must absorb the solar rays, and store heat, which circumstance, joined with the small number of cloudy days we have in winter and the short duration of rains, will account a good deal for the soil never becoming too cold. And it is a well known fact that the aerial parts of any plant will stand lower temperatures, if the roots are not chilled in their functions.

The average rainfall at Santa Barbara is given at 18 inches for the season, that is from October to May, curtailed some years from November to April. In the table annexed it is given for the year, in order to make easier the comparison with other localities. Either by the season or by the

year one likes to consider it, the average will be found to be built up by far distant extremes.

During the rainless period it is that fogs are more prevalent, and mostly during the night and early morning, generally disappearing before noon. They appear to be rather a complex phenomenon, behaving as they do in apparently capricious ways. No doubt they must be connected with the variations of temperature, both of the ocean and of the atmospheric strata above the land and above the water. I am not aware of any observations having ever been made (nor in fact do I know by which means they could be made) to ascertain the amount of precipitation to be credited to the fogs, which I believe must be quite considerable on the sides of the mountains, and wherever the land is covered with vegetation.

Owing to the protection afforded by the mountains on the north and by the islands on the south, heavy winds are not frequent, and the so-called trade winds, which will blow from the northwest during the summer months, are never strong enough to bend permanently any trees, as it is to be seen in other parts of California, even many miles inland.

Cyclones and hurricanes are practically unknown here; in fact, thunder storms are quite an event, and strange to say, occur only during winter; hail, too, being of such rare occurrence, that farmers and fruit growers are not preoccupied of it in the least. To more competent authorities I will leave to explain the reasons of such remarkable, and not less welcome, lack of electric activity, limiting myself to state the fact. Snow appears on the crest of our mountains, but not every year, and there is no record of any ever having fallen in town. The yearly range of temperature is given in the annexed table, in connection with which I will state, that, although some meteorological observations were started here as early as 1867, it is only since 1884 that self-registering instruments were introduced by Mr. Hugh D.

Vail, and thoroughly reliable and complete series of observations have been taken by him.

Concerning the highest temperatures, I will remark that they have occurred for a few hours perhaps, and in different months, and always in connection with dry winds from the Mojave Desert, or with extended brush fires on the mountains. From this it will be seen that they have no intrinsic importance.

The observations registered have been taken in town at an elevation of about 100 f. on the sea. No regular observations have ever been taken in Montecito, or in other points of the foot hills, where the minima will be higher of course.

In default of thermometric records covering a longer period of years I have been endeavoring to obtain information from the older standing vegetable tests which are available. The oldest introduced tree in Santa Barbara appears to be the large "*Casimiroa edulis*," De la Guerra street, at about 50 f. above sea level, said to be over 70 years old. This tree is a native of Mexico, as is also the large "*Prunus capuli*" close by and probably of the same age. None of them bears evidence of having ever been frozen down, or even partially injured in their trunks. Orange and lemon trees, some thirty-five years old, there are in the lower parts of town, and there is no record of their having been touched by frost: so that putting together the experience with more tender plants set out these last twenty-five years, it is safe to assume that Santa Barbara is absolutely free from those "cold snaps," which occur periodically even in localities enjoying a higher average temperature.

"Equability" is the chief characteristic of Santa Barbara climate, by which term I will be allowed to designate the absence of very wide and sudden changes in temperature, checking the growth of plants. Such peculiarity is sufficient to explain, I believe, how it happens here that so many plants will keep on growing all through the year,

consequently attaining larger size in a short time, and not few of them are becoming everblooming, a quality they did not possess in their native countries.

If one takes to examine the native flora of the surroundings of Santa Barbara, and to compare it with the other parts of California, he will be able to state that there is a number of plants from the north finding here their southern limit of distribution, for instance the beautiful *Styrax Californica* and the Buffalo Berry (*Shepherdia argentea*) Perhaps a larger number of plants belonging to the south find their northern limit about Santa Barbara: as exemplified by *Rhus laurina* and *Rhus integrifolia*, and by *Opuntia Engelmannii* a rather unpleasant representative of the Mexican flora: the most remarkable in this line being the case of *Nephrodium patens*, a beautiful fern, widely scattered over tropical Africa and America northwards to Florida and Southern Texas, growing in cañons about Santa Barbara, while not found anywhere in the intervening regions.

In the following notes originally published in the "Press" concerning plants introduced from foreign countries to Santa Barbara, many "hundreds" of species are enumerated, there being hardly any corner of the earth not represented here by thriving specimens of its flora: a striking fact, if it is brought to compare with what has been possible to achieve in other countries. The temperate regions of both hemispheres possess privileged localities, as in Southern France: on the Riviera: at Naples: in Sicily, and in other parts of the Mediterranean basin: at the Canary Islands: at Madeira and the Azores: in the Caucasus, and in the Himalaya, as well as in Southern Africa: on the eastern and southern coast of Australia, and in some parts of New Zealand, and South America, where introducing and experimenting upon exotic plants has been worked up with large expenditure of care and of money: an immense amount of experience having been accumulated, and bringing evidence

that in every one of the mentioned localities different kinds of plants have failed to succeed, owing to some uncongenial conditions.

Total failures of this description are unknown in Santa Barbara, and, if it must be allowed that here experiments have not been carried on such extensive scale as in some of the above mentioned localities, it is also fair to say that not too much amount of knowledge and of care has been bestowed on them up to now, leaving nature work for itself. Taking all in all, it is conservative enough to state that as far as experience goes, Santa Barbara possesses the privilege of wider comprehensiveness and adaptibility to growing plants of the most disparate climates over any other locality known.

To investigate how far and how favorably such conditions congenial to vegetable life may benefit the life of human beings, ought to be well worth studying thoroughly by competent authorities. In regard to plants, taking into consideration the immense extent of our continent still open to colonization and to improvement, the diversification of its climates, ranging from polar cold to tropical heat; and the advisability of endeavoring to introduce useful plants from whence they are native, I hope to have been able to put in evidence that such highly beneficial work nowhere can be carried on in more favorable conditions as in Santa Barbara.

DR. F. FRANCESCHI.

Santa Barbara, May, 1895.

TABLE showing highest and lowest temperature, annual rainfall, and number of days in which temperatures below 43° Fahr. and above 83° Fahr. were registered, during 23 years at Santa Barbara, California, U. S. A. (lat. 34 deg. 26 min., long. 119 deg. 43 min,)

	Yearly Temperature.		Below 43° Fahr.	Above 83° Fahr.	Annual Rainfall
	Highest.	Lowest.	Number Days.	Number Days.	Inches.
1871	100	40			13.67
1872	100	38			11.87
1873	86	40	7	1	11.64
1874	88	38	9	6	12.12
1875	95	40	4	22	22.34
1876	86	40	17	4	16.55
1877	102	37	15	10	9.65
1878	94	33	23	8	30.54
1879	97	33	13	15	14.70
1880	85	33	48	1	29.31
1881	87	36	29	2	8.16
1882					12.32
1883	103	28			16.25
1884					39.01
1885	103.5	34	13	18	17.55
1886	85	34.7	54	5	13.86
1887	95	37	59	12	17.08
1888	95	30.5	33	12	26.26
1889	107.5	38	30	19	32.81
1890	98	33.5	43	22	15.44
1891	98	33.5	50	18	14.38
1892	97.5	37.5	38	15	19.42
1893	88	38	35	5	19.61
1894	94	33	44	9	10.08

N. B.—To convert Fahrenheit degrees in Centigrades deduct 32, multiply by 5, and divide by 9. So 83 deg. Fahr. = 28.33 Centigrade, 43 deg. Fahr. = 6.11 Centigrade.

To convert inches in millimeters multiply by 39.37. So 20 inches = millim. 787.4.

THE PALMS.

Although writing in a free republican country, it will be allowed to speak first of these kings and princes among plants, as the Palms were called by Linnaeus: it is true that American people have found the way of democratising them, mixing them with inferior creatures, and it is not unfrequent to hear of the "palm lily," which is neither a palm nor a lily, but a Yucca, (of which one of the most glorious kinds, *Y. Whipplei*, is the pride of our hillsides) and of the "dragon" palm, name wrongly given to different species of Dracenas. Most people, however, understand what true palms really are, and know that they may be divided into two sections, viz; the fan leaved and the pinnate or feathery leaved palms.

To the first section belongs the native palm of California, not growing wild in our county, but only in San Bernardino and San Diego counties. The *Washingtonia filifera* or common California fan palm does not appear to have been introduced since very long in Santa Barbara, and though plentiful enough, this species has not been so extensively planted here as in Los Angeles. The finest and largest specimen, probably over thirty years old, is to be seen about half a mile south of the post office of Montecito.

Very likely the palm first planted in Santa Barbara must have been a common date palm (*Phoenix dactylifera*) considering that the first Franciscan Missionaries used to plant it always near their churches and buildings. None of that age are extant, however, but it is safe to say that there are more date palms in Santa Barbara than in any town on this coast, many of them of good size. The finest and largest grove of them is to be seen at Glen Annie, beyond Goleta, although some of the largest trees were lifted and

shipped to the World's Fair at Chicago two years ago. It is not unfrequent for the date palm to bear fruit here and produce perfect seed, but it must be said they seldom attain all the desired sweetness, probably owing to our summers not being hot enough.

Of other kinds belonging to the same genus Phœnix, and having all a certain degree of likeness with the preceding, *Ph. Canariensis* is the more generally grown, of which the finest specimens are probably those in the grounds of Mr. C. F. Eaton, at Montecito, bearing a truly wonderful amount of fruit every year. There is also at the same place the finest specimen of *Phoenix reclinata* from Southern Africa, which is noticeable for its long fronds gracefully recurving edgeways and the bright orange color they have at the base. Probably all the other known species of Phœnix have been introduced already and are doing well in our gardens without exception, but they are generally too young to deserve special mention.

To two different groups of equally pinnate leaved palms, two of them belong which can be said to be nearly monopolized by Santa Barbara. Nowhere indeed in the United States are to be seen more *Cocos plumosa* and more *Seaforthia elegans*, and the time is not far when these noble plants will impart a special character to our town, with their feathery heads towering above other humbler vegetation. *Cocos plumosa* takes the lead, and good sized specimens are rather numerous, the largest having been planted some fifteen years ago by Mr. Kinton Stevens in his grounds at Montecito. None of them have flowered up to now. Of other species of Cocos belonging mostly to Southern Brazil and the great basin of River Plate, many are to be seen already in our gardens, some of them promising to supersede in general favor the above mentioned, both in gracefulness and hardiness, which last is however quite out of the question. Special mention must be made of

a large specimen doubtfully referred to *Cocos flexuosa* or to *Cocos Romanzoffiana* growing in the garden of the late Mr. G. W. Chapin at the corner of Chapala and Micheltorena streets, where another most remarkable pinnate leaved palm (probably an *Astrocaryum* from Central America) is throwing up with greatest vigor the most formidably black spined leaves one can imagine.

Seaforthia elegans or *Archontophoenix Cunninghamiana* as it ought to be correctly called (is it not a pity that beautiful plants have received such bewildering names?) a native of Northeastern Australia, is nearly as much at home in Santa Barbara and nearly as frequent as *Cocos plumosa*. Some of them have flowered, and the one on Victoria street, belonging to Mr. E. S. Sheffield, some eighteen years old, has repeatedly been ripening seeds. Apart from the elegance of its foliage and the slenderness and smoothness of its trunk, the flowering of this palm is one of the most beautiful things to see, the bunches hanging down like an immense marabout of a delicate pink color, succeeded by round berries which turn to bright red when approaching maturity.

People have been asking if the true Cocoanut (*Cocos nucifera*) has been or could be grown in Santa Barbara. To my knowledge it never has been, but there is no doubt that it would be worth trying to obtain and experiment upon some of the hardiest varieties of this most precious palm of all warm countries. The so-called *Coquito*, or small cocoanut of Chile (*Jubaea spectabilis*) is not uncommon but not so extensively planted as it ought to be, people wrongly considering it as a very slow grower, which is not the case if liberally treated, as shown by two beautiful specimens at Mr. K. Stevens's in Montecito, which I believe to be the largest in Southern California.

Another pinnate leaved Palm having some likeness with the *Seaforthia*, but growing to a larger size, is *Ptychosperma*

(correctly *Archontophoenix*) *Alexandrae*, and of this, too, there are a few good specimens in our gardens, but not yet much developed. A few more palms must be mentioned belonging to the same section of the feathery ones. Four kinds of Kentias (more properly *Howea Belmoreana*, and *H. Forsteriana*, *Hedyscepe Canterburyana* and *Clinostigma Mooreanum*), all of them from Lord Howe's Island, and four or five different kinds of *Chamaedorea* from Mexico and Central America, have been planted to some extent quite recently, and appear to thrive well, mostly if allowed partial shade.

Fan-leaved palms are generally not so much in favor as those of the preceding section, but still Santa Barbara possesses the most remarkable specimens known in gardens of any part of the world, of both species of *Erythea*, *E. armata* and *E. edulis*. The first, commonly called the "blue Palm" a native of Lower California, finds here the most congenial soil and climate, and beautiful specimens are not rare, the largest being a couple at Mr. K. Stevens's, in Montecito. More plentiful still and represented by larger specimens, is *Erythea edulis*, the "Guadalupe Palm," as it is called from being a native solely of the Mexican Island of Guadalupe, 250 miles south of San Diego. The largest of these, said to be over thirty years old, and most likely the parent of the other large specimens, can be seen in Dr. Brown's garden, State street south of Gutierrez, and has a clean, smooth trunk of about nine feet high. Of a species of *Brahea*, probably from Mexico, with most elegant leaves, there is half a dozen plants scattered about town, perhaps ten years old, none of which has flowered yet, not allowing proper identification. *Chamaerops humilis* from Southern Europe, and *Chamaerops* (properly *Trachycarpus*) *excelsa* from China are plentiful, and there is also not unfrequent what appears to be a depauperate form of the latter, known under the name of *Chamaerops robusta?*

probably introduced from Japan, which I believe to be very little if at all known in gardens out of Santa Barbara. The Queen of Palms of this section is *Livistona* (or *Corypha*) *australis* from N. E. Australia, rather extensively planted, of which the noblest specimen is undoubtedly the one belonging to Mrs. J. Edwards, on the corner of Anapamu and Garden streets. The nearly related *Livistona chinensis* (*Latania borbonica* of Gardens) is not so common, nor so freely growing, although there are a few good specimens which appear to thrive better in partial shade. Less common still and equally shade-loving, appears to be the Chinese and Japanese *Rhapis flabelliformis.*

Of Sabals not many have been planted here, but we have *Sabal Palmetto* from Florida and Georgia, of which most beautiful specimens are to be seen in Mr. Joseph Sexton's grounds at Goleta. This is supposed to be a slow grower, but it will not be so if allowed plenty of water, considering that all Sabals are marshy and sea coast loving plants. The dwarf Sabal (*Sabal Adansoni*) from Carolina southwards, is not uncommon, but the most beautiful of all is the unique specimen very likely of *Sabal Blackburniana* existing in the grounds of Mr. E. H. Sawyer at Montecito, probably over twenty years old and one of the most striking plants to be admired in this country.

From the above notes it appears that over thirty distinct species of palms have already obtained citizenship in Santa Barbara, many among them flowering and bearing fruit as in their native countries; while a still larger number is on trial and promising to succeed in the same way. Many more remain to be introduced, and our efforts must work in that direction. The *Ceroxylon andicola* or Wax Palm, one of the most majestic in this majestic family, growing over the Andes up to 8000 feet; the *Oreodoxa oleracea*, or Cabbage Palm of West Indies, probably the tallest and quickest growing of all palms (it attains 170 feet in

comparatively few years); the extremely rare *Pseudophœnix Sargenti* lately discovered in extreme southern Florida; the *Juania australis*, native only of the secluded island of Juan Fernandez; and a host of others, we may hope to have well established in our gardens within a few years. By such extensive increase in planting of palms, what an attractive and æsthetic character may be imparted to our city and vicinity is hardly to be conceived. Why should not steps be taken to secure the planting of whole streets with rows of palms? The far famed avenues of Hyéres, of Algiers, of Rio Janeiro can be equalled and surpassed in Santa Barbara, if only we will have the will to do it.

THE BAMBOOS.

Next to Palms, precedence must be given to Bamboos for their importance, not only as decorative, but principally as useful plants. To what immense number of diversified uses they can be employed everybody knows. Not so generally, however it is known that bamboos will flower and ripen seeds very seldom, that is, once in their life, after fifty and more years perhaps; this supreme effort appearing to exhaust the vitality of the individual, just as the commonly called Century Plant (*Agave Americana*) offers an example familiar to all. Not that the flowering of bamboos have any likeness with the above, their flowers being minute and produced in more or less furnished spikelets generally from the axils of the stems or culms; their seeds resemble those of other grasses more familiar to us, like wheat, barley or oats; they attain larger sizes at times (above two hundred are the known species of bamboos) and in some instances are encased in a fleshy pulp (these are called *Melocanna* that is apple reed, but have not yet been introduced to

cultivation from their native habitat, which is southern India and the Malayan Archipelago.)

The scarcity of seeds, and the prohibitory weight of strong clumps which, moreover are very liable to dry off and die on a prolonged journey, give sufficient explanation why bamboos are not so plentiful in Southern California as ought reasonably to be expected. Still Santa Barbara takes the lead with them also, the larger number of kinds as well as of specimens being undoubtedly to be seen here. The most prized and most popular, there being hardly any decent garden deprived of it, is *Bambusa gracilis* from the Himalaya, originally introduced by Mrs. Sarah E. Cooper, at Ellwood, now grown up to be a truly magnificent specimen, from which probably the others seen here are derived. Another beautiful specimen grows at Mr. John Spence's nursery not much out of the city limits. Next to this in general appearance, but rather reduced in size of stems and leaves, and not so widely distributed is *Thamnocalamus Falconeri* (*Arundinaria falcata* of gardens), from the same region as the above, but from higher altitudes, as it is shown by this last being hardy in many parts of England. These two kinds and a third one, which I would refer doubtfully to *Bambusa verticillata* (from the Himalayas with erect, not arched, deep yellow stems, and leaves in whorls, partially striped with white, do not produce runners or suckers, and can be propagated only by dividing clumps, which has certainly prevented their more general reading in gardens.

Of the so-called Japanese species (which are really originating from Northern China) the most commonly seen is *Bambusa* (or more correctly *Phyllostachys*) *viridi glaucescens* attaining thirty feet and over with culms about one inch thick. The finest growth of this is undoubtedly in the grounds of Mr. E. H. Sawyer, at Montecito. *Phyllostachys nigra* (the black bamboo) is rather common; not so much

Phyllostachys aurea (the golden bamboo) these two never attaining very large size. The six mentioned species together with *Bambusa metake* (correctly *Arundinaria japonica*) which has larger leaves, and thinner and shorter stems than any of the preceding, are fairly common, and appear to have been introduced in Santa Barbara within the last 25 years. Quite recently a much larger number of other species or varieties have found their way in our gardens, mostly through the Japanese importing houses of San Francisco and Oakland. They generally bear only Japanese names, and it will be very hard to have them properly identified before they are more fully developed. Among them are some not to be seen yet in European gardens, while others rather well known there are missing here.

Special mention must be made of the so-called *Giant Bamboo of Japan*, which has been introduced here of late years at rather high prices, as it will be worth while saying something more about it in order to prevent misconceptions. Giant Bamboo is a vague name applied not to a determined species but to many of the taller Bamboos growing in different countries. The largest Bamboo living in Japan is *Phyllostachys mitis*, originally from China where it was found by Fortune to grow sixty feet high. In Europe where it has been well known these last 25 years it makes thicker stems but not taller than *Ph. viridi glaucescens*, and presents the habit of a much enlarged form of *Ph. aurea*. Whether the plants lately introduced here belong or not to this species, it will be hard to tell for some time, they generally having one big stem cut down to a few inches above ground, and making only short and thin shoots for the present.

One of the largest growing Bamboos (which also is called giant) is *Bambusa vulgaris* from India, introduced now to all warm countries. To this species I believe to belong two good clumps growing vigorously in the grounds of Mr. K.

Stevens, and a smaller one in those of Mr. F. W. Gillespie both of Montecito, none of them having attained their ultimate size. Not less tall and thick than the preceding (that is 70 feet high and two to three and more inches thick) is *Bambusa arundinacea* similarly from India, to my knowledge not introduced before to the U. S., of which the Southern California Acclimatizing Association of Montecito has been lucky to raise a large stock, which will afford to distribute rapidly such a desirable plant all over the country, not only for ornament, but for industrial purposes.

Efforts made in this direction ought to secure in a short time the spreading also of the gold stemmed form of *Bambusa vulgaris*, which is quite hardy at Palermo, Sicily, of the Catamarang Bamboo from Formosa, growing together with the Camphor trees, and acknowledged to produce the largest stems known, and of many other kinds likely to thrive well here. The rich, deep alluvial soil of our valleys will be particularly suitable to them, but it would be a mistake to believe that Bamboos will grow only in moist grounds, many of them being exposed in fact to most severe droughts in their native countries.

DECORATIVE PLANTS.

Under this heading are commonly designated plants having bold and striking foliage, widely differing from the more usual types of native vegetation, which impart peculiar and attractive features in gardens or in houses, independent of flowers. Besides palms and bamboos mentioned already, a large number belonging to different genera are to be seen in Santa Barbara.

Among these, Bananas rank first to be sure, and have been introduced in varieties, the most common, however,

being the ordinary type of *Musa paradisiaca*, probably brought here first from Mexico. Of this and other kinds bearing edible fruits, will say more in notes concerning exotic fruit bearing plants. The Abyssinian banana (*Musa ensete*) the giant of the genus, grows splendidly and is extensively planted here, where it bears an abundant crop of seeds when only four to five years old, the plant dying off, as everybody knows. This banana does not throw out suckers like the others and is propagated only from seed. Quite exceptional and very striking is the specimen of *Musa ensete* in front of Mrs. Julia Redington's residence, corner Pedregosa and Santa Barbara streets, which has several trunks or shoots coming from the same base. This plant was raised from seed by Mr. John Spence, some eight years ago, this extraordinary proliferousness having had the effect of delaying its flowering, and consequently prolonging its life. *Musa Martini*, quite lately introduced, it is said, from Central Africa, is growing in the grounds of Mr. F. W. Gillespie and of the Southern California Acclimatizing Association at Montecito, but does not promise for now to supersede *Musa ensete*, in any respect. To the same order of the Musaceæ belongs *Ravenala Madagascariensis*, the traveller's tree of Madagascar, building a regular trunk from which a number of large, long-stalked leaves diverge in the shape of an immense fan. Young specimens are to be seen in Montecito, the largest in the grounds of Mr. William P. Gould. Nearly related to the preceding are the Strelitzias from Southern Africa, of which we have what goes under the name of *Strelitzia augusta* growing nearly as tall as *Ravenala* but hardier and of a glaucous color. The largest plant in Dr. Brown's garden, State street, flowered last year, as did one in Mrs. Helmer's Nursery, Haley street, both having proved from their flowers to be *Strelitzia Nicolai* and not *S. augusta*. Much more common in our gardens is *Strelitzia Reginæ*, sometimes called bird of paradise flower, whose

chief attraction resides rather than in the foliage in the strangely shaped blue and yellow flowers which here on well established clumps, are freely produced all the year round.

Cycas revoluta, the so-called Sago Palm, a great misnomer by the way, as it is not a palm, and does not yield the true sago of commerce (which is produced by *Metroxylon laeve* and *M. Rumphii,* Palms of the Malayan Archipelago) has been introduced here quite a long time, and large specimens are not unfrequent, while of other Cycads there are very few, and introduced only of late years. There is hardly any doubt that all species of Cycads from Mexico, Australia, South Africa, and most of those from warmer countries will thrive well with us.

Of the Screw-Pines (Pandanus) as they are commonly called, owing to their leaves resembling those of the pine-apple, but arranged in a spiral way like a screw, one kind only has been tried up to now, and this is *Pandanus utilis* from Mauritius and Madagascar, of which the largest and oldest is in the grounds of Mr. K. Stevens at Montecito, not appearing, it is true, to have found here too much congenial conditions. There are other species of Pandanus, some of them growing up to 4,000 feet altitude in India, and another in Lord Howe's Island, which ought to do better here, and allow us to enjoy the sight of one of the most curious and striking forms of tropical vegetation as the screw-pines are acknowledged to be.

Dracaena draco, the true Dragon tree from the Canary Islands, must be quite an old inmate of our gardens, judging from the large specimens existing in front of the Arlington Hotel, at the corner of State and Valerio streets, at Ellwood in Mrs. Cooper's garden, and at Carpinteria in the grounds of the late Professor Ford, whose name will remain indelibly connected with introduction of plants to this country and with the popularization of taste and love for them.

Dracaena, or more correctly *Cordyline indivisa*, from New Zealand, is by far more common, and the large umbrella-like spreading specimens are quite a feature around many residences in town and in the country.

Not too common but introduced since long is the lower growing *Cordyline congesta* from Australia, with shorter and broader leaves more gracefully reclining. Of this, the finest specimens I have seen in Carpinteria. Clumps of what appears to be *Cordyline coerulea*, a reed-like growing plant with narrow herbaceous leaves, are to be seen only in some of the oldest gardens. Of *Dracaena brasiliensis* there is a good flowering specimen in the grounds of Mr. K. Stevens, of Montecito, and near by, at Mr. C. F. Eaton's place, *Dracaena ferrea* has proved to be quite hardy in the most severe winter of 1893–94. From this circumstance we may reasonably expect that not a few of the numberless forms of Dracenas with variegated leaves will do well if planted in proper situations.

To the cosmopolitan family of grasses two plants belong which have gained a prominent place in the landscape about Santa Barbara. The common reed from Southern Europe (*Arundo donax*) here attains perhaps larger size than in its native country, the form with variegated leaves being mostly grown. The common form was very likely introduced by the Franciscan Fathers from Mexico; the variegated one appears to have found its way here from the Eastern States. Of much more recent introduction is the Pampas grass (*Gynerium argenteum*) from River Plate, which holds a still more prominent place, there being acres and acres planted with it; and, although not so flourishing now as it was some years ago, the Pampas plumes crop has still a considerable importance here, Santa Barbara being acknowledged to be one of the chief suppliers of them to florists all over the world.

The paper reed (*Cyperus papyrus* or *Papyrus antiquorum*)

is to be seen in all gardens, and while an aquatic by birth, it appears to thrive here under ordinary watering. Along the banks of the lower reservoir at Las Fuentes ranch, East Montecito, is to be seen the finest and largest grove of them, which is, indeed, a splendid sight, being enhanced, too, by the drooping, bright crimson panicles of *Canna Ehemanni* shooting off among them. *Cyperus lucidus* is not so common, but equally useful as a decorative plant. *Cyperus alternifolius* and its pretty variegated form are to be seen also in gardens, all of them being perfectly hardy.

Arads are not so common here as they ought to be, The common taro (*Colocasia esculenta*) is the only one grown to any extent, and it keeps well its enormous leaves during winter. Mention must be made also of the so-called Calla lily (*Richardia Africana*) so common everywhere, which however recommends itself rather for the beauty of its flowers attaining an immense size with us. This shows how freely Arads can be grown here, and it ought to encourage to experiment many other species, having quite a superior economic and ornamental value. *Monstera deliciosa* or *Philodendron pertusum* is already ripening fruits at Montecito. Quite a mine of useful species or varieties is to be found in the various islands of the Pacific, from where it ought not to be so difficult introducing them, also there is hardly any doubt that a good many of the most gorgeous colored *Caladiums* will do well here under the partial shade of the oaks just as all the Begonias and tender Ferns do.

The New Zealand flax (*Phormium tenax*) is to be seen everywhere, mostly the variegated form. To my knowledge no attempt has been made up to now to grow it on a large scale for the extraction of the fiber. This is a point well worth of attention when one considers that not less than 76,000 bales of this fiber were imported to the United States during 1891. It will grow well on the bottom lands

of our valleys and is sure not to be injured by the slight frosts occurring there.

The so-called Australian torch lily (*Doryanthes Palmeri*) is not rare, and its producing its conspicuous scarlet flowers and ripening seeds is not unfrequent. In connection with this it is worth remarking that the plant does not die after blooming as it is generally asserted in horticultural books. The more anciently known *Doryanthes excelsa* I have not yet been able to see grown in our gardens.

Agave Americana, the commonly called Century plant, and its variegated form, are of course quite common here, but altogether not so much as one sees in Southern Europe. Of other species of Agaves we have but few: among them *A Shawii* from Lower California is not rare. Strange to say the most common here is *Agave decipiens*, quite recently described by Dr. Baker from Florida, this rather opprobrious name (the cheating Agave) having been applied on account of this species having been frequently mistaken both in Florida and the Bahamas for the true Sisal hemp Agave (*Agave rigida var. Sisalana*) which yields one of the best fibers known, while the fiber of *A. decipiens* is worthless. How this plant found its way to our gardens is a mystery, but I feel inclined to believe it has come rather from Central America than from Florida, with which country intercourses up to a few years ago were very scarce. The plant propagates itself freely by suckers, but although existing in our gardens since many years, it has never been known to bloom, which circumstance would confirm its rather tropical origin.

Of the true Sisal hemp *Agave rigida Sisalana* very few plants have been introduced up to now, but there is at present a large stock in the grounds of the S. C. A. A. at Montecito, this promising to be one of the most useful plants to grow on our dry hillsides independent of any irrigation.

We have here also other plants nearly related to the Agaves, employed up to date simply as ornamental in gardens which are likely to turn out of a considerable economic value. These are three species of *Fourcroyas*: the one known under the name of *Fourcroya longaeva* being the most common, and easily recognizable by its leaves being of a dark green color and almost spineless, and the branchlets of the immense inflorescence inserted at a narrow angle, the flowers being pure white, drooping and fragrant. It is doubtful however whether this is the true *Fourcroya longaeva* which ought to build a very tall stem and bloom only at an old age, as its name would imply. *Fourcroya gigantea* is not common at all, but there has been a specimen blooming this year at Mr. K. Stevens' place in Montecito. Its leaves are of a brighter color than the preceding, generally spiny, and the panicle has much more divaricated branches, the flowers being not so fragrant and white. The species is the one which from Mexico or Central America was introduced years ago in the Island of Mauritius, where it has been grown for its excellent fiber this last century. Of late years from Mauritius it has found its way to Ceylon and to Continental India, where it is most extensively planted and grown under the name of Mauritius hemp. A third species of Fourcroya rather common in our gardens is *F. Bedinghausii*, more known in Europe under the name of *Roezlia regia*. This is truly a magnificent plant, with gracefully drooping unarmed leaves of a beautiful glaucous color: it builds a stout trunk several feet high before blooming, the inflorescence reaching thirty feet and over. The branchlets and the flowers themselves are covered with a sort of woolly coating, and in fact for what I have been able to find out, this species ought to belong to a cooler and dryer region than the two preceding. It is highly desirable that experiments may be properly carried on to test the value of the fibers from these different species as grown with us. As ornamental plants they are

positively first class, but it is not unlikely that they may become not less useful for industrial purposes.

Much less frequent than Agaves, plants belonging to the nearly related genera *Dasylirion*, *Nolina* and *Beaucarnea* are to be found in our gardens. Large specimens of *Dasylirion serratifolium* have been blooming in the old planted gardens of the late Professor Ford at Carpinteria, and of the late Dr. Dimmick, corner Victoria and De la Viña streets. In the same places are most noteworthy two huge specimens of *Beaucarnea glauca* having the base of their curious bottle shaped trunk split in regular diamond like squares. *Dasylirion longifolium* of good size, together with many other species are growing in the grounds of the Southern California Acclimatizing Association in Montecito, and there is hardly any doubt that the plants of the above mentioned genera, when more known will soon become general favorites here, as they are in Southern Europe, for decoration of natural and symmetrical gardens, of terraces, halls, &c., for which uses they are eminently adapted.

The superior beauty of our native yucca (*Yucca Whipplei*) may account perhaps for the remarkable scarcity of other kinds of this beautiful genus of the so-called palm lilies. *Yucca aloifolia* and two of its variegated forms are rather common; and the native one is often transplanted in gardens. Many more species are being largely propagated by the S. C. A. A. at Montecito, the same remarks as noted on the preceding holding good for yuccas, which possess the further advantage of a regular and most conspicuous blooming at different seasons, according to species.

Before closing this rather long list of decorative plants, special mention I will make of one of the very best among them and well known to all, the so-called rice-paper plant from Formosa, *Aralia*, or rather, *Fatsia papyrifera*, which really appears to have found here the most congenial climate. It attains immense size in a very short time, and

propagates freely from suckers. Not less ornamental than the broad, long petioled leaves are the huge panicles of minute white flowers, keeping well nearly all through the winter. I am not aware of this plant having ever been tried for industrial purposes in California, but considering the vigor with which it grows and propagates itself, I believe that it would be well worth experimenting on a certain scale, in places of course where it could get sufficient irrigation. *Aralia Sieboldi*, or *Fatsia Japonica*, a dwarfer plant with glossy leaves, is not rare here, and thrives well in full sun together with its variegated forms. *Ligularia Kempferii* from Japan too, known also as *Farfugium grande* does well, as do the more remarkable yellow-blotched and white-patched varieties of the same.

FRUIT BEARING TREES.

It has been advanced that the capabilities of any country to grow improved strains of fruits are strictly in proportion with the abundance and value of its spontaneous fruit bearing plants. Such theory, if confirmed by observations in other countries, does not appear to hold much good for Southern California, where nearly all the choicest fruits from any country can be grown to perfection, while the native ones were rather poor and scanty, with exception of acorns. The holly leaved cherry or Islay (*Prunus ilicifolia*), the mountain cherry (*Prunus demissa*), the Christmas berry or Tojon (*Heteromeles arbutifolia*), the elder (*Sambucus glauca*), the wild walnut (*Juglans Californica*), the native grape vine (*Vitis Californica*), the three species of gooseberries or baures (*Ribes speciosum, R. sanguineum, R. Menziesii*), the madroño (*Arbutus Menziesii*) and the manzanita (*Arctostaphylos glauca*) offered but meagre resources to the aboriginal

inhabitants, who subsisted mostly on the far more abundant and nutritious products of the sea.

With the establishment of the Missions many kinds of fruits were introduced by the Franciscan Fathers: apples, pears, peaches, almonds, plums, apricots, grapes, olives, figs, pomegranates, limes and oranges, all of them of Spanish descendance no doubt, but more or less modified by the sojourn of over two centuries in Mexico. Fifty years ago the same varieties reigned undisputed over the country; but hardly any of them are to be found at present in our gardens and orchards, with the exception of the olive, the grape and the fig, still preserving with their varietal names, the memory of their first introduction. The others have disappeared, giving place to superior varieties, either of European or American extraction (not in a few cases the variety being indeed from the old country and found simply a new name in this.) Of distinct varieties of fruits originated within the limits of Santa Barbara county I am aware of one only: the *Santa Barbara soft shell Walnut*, which on investigation appears having been raised from seeds imported to San Francisco from Chile.

The growing of grapes and generally speaking of deciduous fruits (perhaps with the exception of the walnut) is certainly not on the increase about Santa Barbara, all attention having been given of late years to the planting of olive and lemon orchards. This last is considered by many to be the most profitable (where irrigation is available) and there are several instances where orange orchards have been transformed to lemons with full satisfaction. Of lemons the variety most generally grown is the *Eureka*: of olives the *Mission* of which however there are different forms or subvarieties.

It does not appear that anything was done by the Fathers in the way of introducing here other fruit trees besides those with which they were familiar in Spain, their native

country. One single exception is perhaps to be found in the tree of Zapote blanco (*Casimiroa edulis*) said to be seventy years old, which is still growing vigorously near the southeast corner of De la Guerra and De la Viña streets. The somewhat irregular trunk is over three feet thick on an average, and branches very soon, bearing a rounded spreading top which attains about forty feet in height and over fifty in diameter. Many people in town have eat of its fruits and confirm the high opinion in which it is held in Mexico, its native country. Of late years this tree has produced no fruits at all, most likely on account of the total absence of cultivation and of the immense amount of black scale with which it is infested. There is a horticultural Society in Santa Barbara, and I would suggest that it would take under her special protection this remarkable tree, which besides being the most important vegetable monument of comparatively olden times, is also well known in foreign countries, mention of this one tree having been made in the flora of California by Watson, as well as in other botanical and horticultural works. A smaller tree but of good size too, said to be some thirty years old (probably a seedling of the above) grows in the block between State, Gutierrez, Chapala and Montecito streets, but is unluckily no better off than his parent. A few more young plants have been planted lately, most of them distributed by the Southern California Acclimatizing Association in Montecito.

In a lot adjoining that where the old Zapote grows, and very likely planted at the same time, but in rather worse conditions, is a tree of Capullin (*Prunus capuli*), a kind of cherry, native not only of Mexico but extending in the temperate regions of Southern America down to Ecuador and Peru, but only west of the Andes. Professor Sargent and other authorities do not admit this to rank as a distinct species, but consider it as a mere south-

erner form of *Prunus salicifolia*, a native of Southern Texas, New Mexico and Arizona. Horticulturally speaking, however, this tree has a special importance for us, as well as for other warm countries, being the only cherry which will thrive in this climate, growing to a very large size, and bearing a profusion of fruits which are produced in bunches, possess a pleasant bitterish taste, and are very good also when dried. The chief importance of this tree will be however in the possibility of crossing it with some of the best cultivated cherries, if artificially they may be brought to flower at the same time. *Prunus capuli* blooms as early as January, and does not ripen its fruits till July. Two splendid specimens of this tree are to be seen at Mr. Lewis' farm near Carpinteria. They are some twenty years old, and seedlings of an older tree now disappeared, which is said to have been introduced from Ecuador.

So far it appears that the *Zapote* and the *Capullin* are the only semi-tropical fruits introduced to this country by the first Spanish colonization, that is before 1849. After this date not much was done at first in this line, owing principally to the immense difficulties of transportation, of which it is hardly possible to have an idea at present.

The introduction of the *Ahuacate* or *Alligator pear* (*Persea gratissima*) is due to the late Judge Ord, who brought a few plants from Mexico about 1870. Two of them are still extant and growing quite vigorously; one of them near the residence of Mrs. Judge Ord, De la Viña street, and the other at Montecito, planted out by Mr. Silas Bond in the grounds owned at present by Mr. E. H. Sawyer, of which mention has been and will be made several times in these notes, because of so many remarkable specimens existing there, whose introduction is to be credited to the enthusiastic zeal of Mr. Bond. In connection with this it is worth recording that most of those plants he was able to obtain through the co-operation of the late Dr. Kellogg, of

San Francisco, who did so much towards the investigation and illustration of our native flora. The Ahuacate at Montecito has been bearing for several years, sometimes as many as five hundred fruits in one year, attaining a large size and perfect maturity. Its brother in town blooms profusely every year (it is actually loaded with blossoms now) but for some unaccountable reason, it never sets many fruits, and these generally drop off when the size of a cherry. I have been told, however, that once a few fruits attained maturity, but were not larger than a walnut, and that one of the seeds germinated. On the other hand there is a large plant of Ahuacate in the grounds of Mr. K. Stevens in Montecito some twelve years old, which has never bloomed, while I know of seedlings having flowered when hardly two years old. Where seedlings of Ahuacate have been raised in large number, a wide range of variation has been noted in size and shape of the leaves, and the same is reasonably to be expected concerning age and feracity of bearing, size, and comparative merit of fruits. It will be only through more extensive planting of seedlings that some superior variety may be brought to light, which then could be easily propagated by grafting or budding, on its own stock, and perhaps, too, on our native laurel (*Umbellularia Californica*) which could also impart to it more hardiness. It is highly desirable that the Ahuacate may become a regular inmate of our orchards, as it is relished by everybody, and, besides the local market, it would find ready sale east. During 1894 the average price on the New York market has been from three to four dollars a dozen, such fruits being shipped there from the West Indies. Nor is there much fear of the market being glutted, the zone where such tree can be profitably grown being rather limited altogether in California.

The *Cherimoya* (*Anona cherimolia*), native of Peru, and now spread all over the tropical and subtropical countries,

is much more frequent in our gardens, although not yet grown to an extent to be a regular marketable fruit. To my knowledge, the first plant was raised in Santa Barbara by Mr. Packard some twenty-four years ago, and it is still flourishing at his residence, Rancheria street, and bearing good crops of fruit every year. The large plants at Mr. Jos. Sexton's nursery at Goleta are seedlings of this, as are a good many more scattered in different places. A few years after, I believe, other Cherimoyas were raised here from seed imported from Guayaquil, Ecuador, two of which are growing in the grounds of Mrs. Ashley, Milpas street, and bear fruit of very superior quality. At the residence of the late Judge Ord, there are also two Cherimoyas some twenty years old, raised from Mexican seeds, and quite different altogether both in foliage and fruits. In the comparatively old garden of the late Dr. Dimmick, corner Victoria and De la Viña streets, there is another Cherimoya with leaves much longer and narrower than any other I know, the fruit I have been unable to examine up to now. Many variations in size and richness of the fruits occur in seedling Cherimoyas, to which the same remarks ought to apply as with the Ahuacate. Nobody would think, at present, of planting an orchard with peach, pear or lemon seedlings, but with grafted plants; the same will be done with these comparatively new fruits, as soon as first-rate varieties will be secured by selection and crossings. Such will be a part of the work of the Southern California Acclimatizing Association in Montecito. Apart of the delightful and indescribable taste of its fruit, the Cherimoya is a very attractive small tree, for its rich, fragrant foliage, and for its exquisitely scented flowers, which begin to appear on plants two or three years old.

There are many other kinds of *Anona*, most of them from Central and Southern America. Several have lately been planted in Montecito, but it is too early to say anything about them.

The Grenadilla or edible passion flower, (*Passiflora edulis*) from Brazil must have been introduced here many years ago, but when and by whom I have failed to ascertain. This bears an immense crop of fruits all the year round, and ought to be grown more extensively. Not long ago fruits of this species were imported to San Francisco from Adelaide, South Australia, and found sale. It would be easier shipping them from here. Of the much larger fruited *Passiflora quadrangularis* there are several plants about town, and in Montecito, some of them bearing profusely their truly magnificent sweet-scented flowers, but very seldom fruits will ripen and never attain full maturity. We have growing in Montecito at Mr. C. F. Eaton's place, *Passiflora ligularis*, from Panama, most remarkable for its rich metallic shining foliage, but producing rather small fruits. *Passiflora laurifolia* (the water lemon of West Indies) and others with edible fruit we are growing already, chiefly with the view of future crossings with the most vigorous common grenadilla; and, with proper care in a few years' time much larger fruited varieties we can reasonably expect to be able to raise.

Guavas have been planted here since long, and in nearly all the oldest places there are specimens of *Psidium guayava*, the so-called lemon or common guava; the largest perhaps, being one at Colonel Heath's ranch at Carpinteria, some twenty years old, I believe. The common guava has never found much favor here, on account of very few people liking the fruit raw, and but little attention having been given to making jelly or preserves with it; and also on account of this plant being subject to the attacks of black scale in a superlative degree. Of a very distinct guava (name and origin unknown) there are two fine specimens in Montecito, one of them in the grounds of Mr. Wm. P. Gould, probably 14 or 15 years old. These grow to a medium sized tree with foliage very similar to that of the strawberry guava,

and not less than this absolutely free from scale pests. The fruit is of reddish yellow color when ripe, but of little value, its principal merit residing in its vigor, and very abundant bearing. *Psidium Cattleyanum*, the so-called strawberry or purple guava, is by all means the most extensively planted in Santa Barbara, as well as in other parts of Southern California. Although believed at first to be of Chinese origin, because introduced to England from China, it proves to be a Southern American plant, like other guavas, and is certainly hardier than any other. It bears plentifully, and fruit finds easy sale, and makes first-rate jelly, too. Where large numbers of this plant are grown, a very wide range will be noticed in variations from seed, affecting size and taste. This ought to induce to try and obtain by selectioning and by crossing some superior strain, which is sure to be a most welcome addition to our pomological resources. With this object in view we are growing in the grounds of the Southern California Acclimatizing Association in Montecito a large number of species and varieties of *Psidium*, which will begin to bear in a short time, and will afford means to do some efficient work in this direction. *Psidium lucidum*, the yellow Cattley Guava, we have begun to distribute quite lately. This in Florida is generally preferred to the preceding.

The Carob, or St. John's bread (*Ceratonia siliqua*) from the Eastern countries of the Mediterranean basin, has been much planted of late years, and there are several bearing trees in our neighborhood. In its native country, as well as in Southern Italy and Spain, this tree will thrive in the most rocky and arid places, so that there are many localities suitable to it in this country. The sweetish pulp contained in its large pods is very nutritious, and largely used for horses and cattle, not the leaves, as, certainly by mistake, has been stated, in an official publication.

Of the Moreton Bay chestnut (*Castanospermum australe*)

there is a tree twelve or more years old in the grounds of Mr. S. P. Stow near Goleta, which has been bearing these last years. It is called chestnut on account of its seeds having the look and taste of an exceedingly large chestnut, but they are contained in a pod, the tree belonging to the leguminous family. It has rich evergreen glossy foliage, and very showy saffron-colored flowers: a most remarkable tree in every respect.

Only a few years ago from the same region (Northern Australia) the so-called Queensland nut (*Macadamia ternifolia*) has been introduced, and there are several plants growing well in Montecito, none of them however of bearing size. This yields a nut of the size of a large filbert, asserted to possess the most delicious flavor, whose value must be enhanced by the difficulty of getting to it, being contained in a nutcracker proof shell.

The Cape Chestnut (*Calodendron Capense*) has been introduced only this year by us in Montecito, and thrives well. Opinions as to the intrinsic merit of the fruit are rather discordant, but this tree will be much prized when known, at least for the extraordinary beauty of its pink flowers and evergreen foliage.

The Mango (*Mangifera Indica*) has been experimented only of late years in Montecito, the largest plant being in the grounds of Mr. K. Stevens, and having been the first to bear a few fruits last winter, which appeared to have attained full maturity. Of Mangos, like of nearly all cultivated plants, there are hundreds of varieties in India and elsewhere, and it is not unlikely that some of them may be found to suit our climate, which could be easily propagated by grafts or cuttings. Seedling Mangos will bear when two or three years old, if properly treated.

Of the *litchi* or Chinese cherry as it is called sometimes (*Nephelium litchi*) there are a few plants about Santa Barbara, which I am inclined to believe not to be authentic, but

to belong to some other species of *Nephelium*, possibly with the exception of a small plant set out last year by Mrs. S. P. Cooper at Elwood. That the true *litchi* will thrive here I have no doubt, and that there will be great demand for these plants is sure too. Seeds appear to lose their vitality very soon, but even if we succeeded in raising any, we may strike a poor variety, so that our efforts have been directed to obtain from China grafted plants of superior quality, to work afterwards on some appropriate stock.

To the same order of myrtaceæ, as the guavas, the Eugenias belong, of which several have been introduced already here. The rose apple (*Eugenia Jambos* or *Jambosa vulgaris*) from East India, so called on account of the powerful fragrance of roses emanating from its fruits, is growing vigorously in different places, and has ripened fruit for the first time with Mr. K. Stevens, in Montecito. This fruit can be made in a most delicious jelly, and will be much prized when better known. The Surinam cherry (*Eugenia pitanga*), and the nearly related *Eugenia Brasiliensis* and *E. Michelii* from South America, are growing too in Montecito, and most vigorous of them all is *E Jambolana* from India, which promises to become one of our best trees, not so much for its fruit, which is small, but for its graceful habit and valuable timber.

The Sapodilla (*Achras sapota*) grows well, but there are only small plants of it. The same can be said of the Natal plum (*Carissa arduina*); of the cluster fig from India (*Ficus glomerata*); of the coffee (*Coffea arabica*); of the jack fruit (*Artocarpus integrifolia*) and of many more introduced quite recently.

Most remarkable among these is the candlenut-tree (*Aleurites moluccana*) of which Mr. K. Stevens has a good sized tree, and a large number have been raised and are offered by the S. C. A. A.

Bananas must have been introduced here long ago, and

very likely from Mexico. They are most common in every garden, and ripen occasionally some very good fruit, but it must be said that up to now they have been grown as ornamental rather than as useful plant, with the exception perhaps of Mr. W. Ferl of West Montecito, who has a regular grove of about an acre of them. The most common variety is the so-called *Orenoco*, but experimenting is going on as to growing other varieties of superior merit and not less hardy than the above.

The melon pawpaw (*Carica papaya*) has been grown several years in Montecito, but never lived long, probably on account of its fleshy roots being too liable to decay in rainy winters. Other species which we are experimenting promise to do better, notably *Carica quercifolia* from Argentina and Paraguay, *C. gracilis* and *C. cundinamarcensis* from Columbia; all of them being particularly remarkable for the digestive power of their leaves, from which *Papaine*, a substance analogous to *Pepsine*, is extracted.

The Cerimon (*Philodendron pertusum*, or *Monstera deliciosa*) which is beginning to attract attention in Florida and in other of the Gulf States, has been grown and fruited successfully here, and in fact, if allowed proper conditions, is sure to bear pretty freely.

Pine apples (*Ananas sativa*) are to be seen in our gardens, but not much attention has been paid to them up to now, and I do not know of anybody having tried to grow them for profit here, as it has been done with some success at San Diego, and other few localities of Southern California. No doubt that if the very best varieties were to be selected, and proper care given to them so as to secure their ripening good sized fruits within sixteen or eighteen months, these ought to obtain higher prices than the rather poor fruits which find their way to our market, mostly from the Sandwich Islands and from Acapulco in Mexico. Some good results we are expecting to obtain from the experiment

we are carrying on with pine apples at the Hot Springs.

In concluding these notes on fruit-bearing trees, I would think proper to remark that it will be only by the enlightened and persevering experimenting of different people in different localities that any new fruit may be truly acquired to the country. To try and make the best out of our exceptional facilities of climate and soil, is a kind of work which ought to be attractive to all.

THE CONIFERS.

Everybody who has been taking interest in ornamental trees or in economic forestry is well aware of the rage for conifers which has pervaded all Europe and the Eastern States too, some fifty years ago, mostly as a direct result of the discovery and introduction of so many different kinds of admirable coniferous trees from California. If in other countries this, otherwise justifiable, *furore* has caused conifers to be planted too exclusively and often in most unsuitable places, here it appears that the ancient canon "nemo propheta in patria" has ruled. With the exception of our two coast conifers, the Monterey Pine (*Pinus insignis*) and the Monterey Cypress (*Cupressus macrocarpa*) to be seen everywhere, other Californian and American conifers are more scarce in our gardens than species from other countries. There are only a few rather small specimens of the Big Tree (*Sequoia gigantea*) which will thrive, however, only in deep soil and where it will never be too dry. The Red Wood (*Sequoia sempervirens*) is more accommodating, and there are several good plants in town, and most in Montecito, the largest being the one planted by Mr. S. Bond in the grounds owned at present by Mr. E. H. Sawyer. At the same place there are also the finest and really admirable

specimens of the Lawson Cypress (*Chamaecyparis Lawsoniana*). Of the White Cedar (*Libocedrus decurrens*) there are a few good-sized trees on Haley and on State street, unluckily defaced by having had their lower branches cut away. This is all we possess (with the exception of perhaps a few plants lately set) in the line of native conifers, and it is not much, one must confess, the more so considering the natural richness of Santa Barbara county in these most attractive and most useful class of trees.

We have in fact in our mountains, within two or three days journey from town, groves of conifers which can well compete with the most celebrated in other parts of the State, and, although of such difficult access, many of our citizens, and of our ladies too, have visited them. I do not know indeed of any other place which can stamp on the mind a more vivid impression than "Bear's Camp," at the northern foot of Pine Mountain, altitude five thousand feet. Artists, landscape gardeners, and mere admirers of the beauty of nature, will dream of that natural park, not yet defaced by the hand of man. There are thickets there, and groves where the sun's rays never penetrate, open glades where healthy, glorious evergreen trees of different foliage and color are towering to the height of two hundred feet and over; while in every direction younger plants of all sizes, down to one year's seedlings, spring out in a wonderful but harmonious confusion. It is really astonishing to behold there all at one glance the grandest and the prettiest specimens of not less than six different kinds of conifers: three pines among them, viz: The Sugar Pine, (*Pinus Lambertiana*) with its gracefully drooping branches, bent down by the weight of its slender shining cones, often one foot long: the Coulter's Pine, (*Pinus Coulterii*), with erect limbs, and its huge cones (the biggest of all pines) crowning the trees with a wreath of gold in the setting sun; the yellow Pine (*Pinus ponderosa*) one of

the largest pines known, of which trees are in sight from town growing on the ridge of the Santa Ynez mountains. A Fir there is too, by hunters called the Balsam (*Abies concolor*) exuding a large quantity of aromatic resin; the young trees having their smooth stems nearly white, while the foliage varies to different shades of green, but never so "bluish," as the same species occurs in Colorado; the Douglas Spruce (*Pseudotsuga Douglasii*) there is too with its long, drooping branches covered with dark green foliage. Finally, the White Cedar (*Libocedrus decurrens*) brightens the landscape with its soft, velvety green, the older trees assuming quite a fantastic appearance, with the short limbs twisted like the antlers of a gigantic elk. It is really to be hoped that such a privileged spot should be preserved in all its beauty, and I have been assured that steps in this direction have already been taken.

Coming back to exotic conifers, the most prominent of them all is the Norfolk Island Pine (*Araucaria excelsa*) whose tall, stiff spires are a sure indication of all oldest planted gardens. This remarkable tree appears to be at its best with us, some being over one hundred feet high, and generally bearing cones, which appear to ripen perfect seeds, as in some places there are young plants growing of self-sown seeds, not a common occurrence out of its native country.

Of *Araucaria Cookii*, from New Caledonia, I know of a good sized specimen in town and of several near Goleta which are bearing cones every year. All of them present the peculiarity of growing not upright but sensibly inclined to southeast. Identical remark has been made by Mr. John Cameron on trees growing at Bangalore, East India. Younger plants are to be seen in our gardens of *Araucaria Bidwillii*, the Bunya-Bunya, or Moreton Bay Pine, of *Araucaria Cunninghamii*, equally from Moreton Bay, North Australia, of *Araucaria Brasiliensis* from the Organ Moun-

tains of Brazil, and of *Araucaria imbricata*, the so-called "monkey puzzle," extending to the southerner and colder part of Chile; all these doing remarkably well, but none having yet flowered, as far as I know. The same may be said of *Cunninghamia sinensis*, which through similarity of habit and name has been sold some times as *Araucaria Cunninghamii*.

The most remarkable among exotic conifers introduced here is, to be sure, the splendid specimen of *Dammara* in the grounds of Mr. E. H. Sawyer at Montecito, planted by Mr. S. Bond more than twenty years ago. He had it from San Francisco, through Dr. Kellogg, but the exact origin is unknown. It does not appear to be the Kauri Pine from New Zealand (*Dammara australis*), and has been doubtfully referred to *Dammara robusta*, from Queensland, while Professor Sargent who saw the tree last winter, was inclined to believe it may be *Dammara orientalis*, from Java. Most likely the question will be definitely settled only when the plant will bloom, and this not having happened up to now, is explained perhaps by its more tropical birth. An appearingly different *Dammara*, with broader leaves but a much slower grower, is in the grounds of the late Professor Ford, at Carpinteria. True pines, as said above, are scarce, but there is a gigantic specimen of *Pinus maritima* from the Mediterranean basin, growing in the garden of Mrs. Judge Fernald, Haley street, which must be some twenty-five years old. Of the Italian umbrella, or Stone Pine (*Pinus Pinea*) there are a few plants growing nicely, both in town and in Montecito, the largest however in our county, and, to my knowledge, in Southern California, grows at the main ranch of Santa Cruz Island, a striking association, being in the center of an Italian speaking village.

The pyramidal form of the so-called Italian Cypress (*Cupressus sempervirens var. pyramidalis*) has been much planted here, but always as isolated specimens, and never

in rows or groves which are such characteristic features in Oriental or Italian landscapes. Of the weeping or funeral Cypress (*Cupressus funebris*) from Himalaya and Tibet, there is a splendid specimen at Mr. E. H. Sawyer's at Montecito, and others in town. Other conifers, as *Cedrus deodara*, and *C. Libani, Cryptomeria Japonica*, and *C. elegans, Sciadopytys verticillata*, and other Japanese species, have been planted only recently, and all appear to do well. No doubt that the richest and most instructive "pinetum" in the United States, and perhaps in the world, may be planted here, where conifers of all climates thrive equally well.

EVERGREEN SHADE TREES.

One hundred years ago, both our valleys and our hillsides appear to have been covered with magnificent evergreen oaks (*Quercus agrifolia*), a memory of this being retained in the names *El Montecito* (the small wood), *Carpinteria* (the lumber yard.) Unfortunately most of these natural groves fell under the axe and the fires of the early settlers, and it is only of late years that people have become aware of what treasures had been recklessly destroyed, so that it is with jealous care that what remains of the oaks is preserved at present, mostly in Montecito, where they certainly form one of the principal attractions.

People here must have soon began to look for shade, and the first tree introduced for this purpose appears to have been the pepper tree (*Schinus molle*), very likely as far back as the first establishment of the Missions, this tree having been from its native country, Peru, widely spread over the Spanish colonies in America, as also in Southern

Europe. In California it has been so extensively planted, and attains such dimensions that for many people it has become *The California pepper.* What was left of perhaps the oldest plant in town, a gnarled stump constantly pollarded and abused, has disappeared quite recently from State street, in front of the Commercial hotel. Very large peppers, some of them exceedingly picturesque, are scattered about town, and chiefly in the lower part towards the ocean.

Of much more recent date has been the introduction of the blue gum (*Eucalyptus globulus*) from Australia, some thirty years ago I believe, which has been so extensively planted all over our State to become quite a feature in the landscape and the staple supply of fuel in the country. A decree of proscription edicted by our city council not many years ago has made most of the finest trees disappear from the city limits; but a few are still extant, imposing branching trees, like one at the corner of Yanonali and Milpas streets, and the huge couple near the residence of Mrs. M. A. Ashley on Laguna street. Other kinds of Eucalyptus, like *E. rostrata, E. viminalis,* and others have been more sparingly planted, chiefly by Mr. Elwood Cooper, who has done so much towards the popularization of these useful trees. The most numerous collection of gums, some fifteen species, I believe is to be seen in the grounds of Mr. I. G. Waterman in Montecito, planted by Mr. F. M. Gallaher only a few years ago, many of them having attained quite a good size.

Besides the Gums, and within the same period of about thirty years, Australia has been supplying to our gardens the bulk of evergreen trees. Several kinds of Acacias, among them the most prominent being *A. melanoxylon,* (the largest in Carpinteria) *A. dealbata, A. decurrens,* and *A. molli-sima,* unrivalled when blooming, and, omitting several smaller growing kinds to be classified among shrubs, special mention must be made of *Acacia retinodes,* or *floribunda,* as

it is called by some people, on account of its flowering all the year round. Large, old specimens of Acacias are not frequent about the country, some years ago the unjustified belief having found credit that they were breeding (!) scale, and were accordingly indiscriminately destroyed!

Of the strange looking *Casuarina quadrivalvis*, the so-called sheoak of East Australia, there are a few remarkable specimens in town, and a perhaps larger one at Mr. J. Sexton's, at Goleta; smaller ones are not unfrequent, but not planted as much as this tree would deserve, particularly for its adaptability to grow on the seashore, and on saline and alkaline soils.

Grevillea robusta, the silk oak of Australia, has been much planted, and makes fine trees, splendid in June, when covered with their orange flowers but unluckily too liable to have their heavy laden limbs broken by wind.

The flame tree (*Brachychiton* or rather *Sterculia acerifolia*) from Australia too, is quite common, and there are some large trees about town, but it is only in the most neglected places (that is where they will not get a drop of water during summer) that they will display their striking inflorescence. *Brachychiton populneum*, correctly *Sterculia diversifolia*, growing in a columnar form like a Lombardy poplar, is nearly as common, the largest being, I believe, in Mr. J W. Calkins' garden on Santa Barbara street, and in the grounds of Mr. J. Sexton at Goleta, and of Mr. E. Cooper at Ellwood.

An indispensable inmate of every garden is the Moreton Bay rubber tree (*Ficus macrophylla*), the finest probably at Elwood, and less frequent the smaller leaved *Ficus Australis*? more freely throwing out aerial roots, of which the largest is at the old Packard place west of town. The true rubber tree from Assam (*Ficus elastica*) is more tender, but does perfectly here, and at Mr. E. H. Sawyer's in Montecito there is, I believe, the finest and largest specimen in

California, some twenty years old.

Magnolia grandiflora from the Southeastern States is so similar in appearance and in shape of the leaves to *Ficus macrophylla*, as not to be easily distinguished from it at some distance, was it not for its large, strong-scented flowers opening here not only during summer, but in every month in the year. *Magnolia grandiflora* does best in deep, never too dry soil, as can be seen by the really grand tree at Mrs. Fernald's, Haley street. At the same place is also the largest camphor tree (*Cinnamomum camphora*) from Formosa, quite extensively planted in all our gardens.

Among smaller sized trees mention must be made of the curious *Banksia australis*, of which two fine specimens are at Mr. Sexton's at Goleta, and at Mrs. Ford's at Carpinteria; of *Eugenia australis*, rather frequent; of *Myoporum laetum*, from New Zealand: of *Jacaranda mimosaefolia*, from Brazil with feathery foliage and bright blue flowers; of the Cork oak (*Quercus suber*) from Southern Europe, which here adapting itself to California conditions has become a fast grower; and last of all, to give it a more prominent place, the pride of our Southern California gardens, the always admired silver tree (*Leucadendron argenteum*) from the Cape of Good Hope, being the obstinate puzzle of the growers on the Riviera, here thriving apparently in any soil, and without any particular care; a tree there being in Montecito at Mr. Geo. Gould's place, which has ripened perfect germinating seeds these last years, an unique occurrence, I believe, out of its native Table Mountain.

DECIDUOUS TREES.

If the number of ornamental evergreen trees, besides Palms, Conifers and others mentioned in different sections, has been found to be rather small, trees which will shed

their leaves in winter are still more limited, both in number of species and of individuals, in Santa Barbara gardens. It appears as if (not unlike other southern countries) there had been a sort of aversion against anything representing the winter season of less privileged climates. However, with more knowledge of plants, and with more refinement of taste, it will be found, I have no doubt, that a judicious selection of deciduous trees will materially add to the beautifying of our grounds, so many of them having unrivalled charms, either in their blossoming or in the various displays of their foliage at different stages. Moreover, it is to be noted that for most of them the period in which they are deprived of leaves is considerably reduced here; in some cases some of them never becoming completely bare, as it is well exemplified by the common weeping willow (*Salix Babylonica*). This is not unfrequent, and in remarkably fine specimens, too. The Lombardy poplar (*Populus pyramidalis*) is still more frequently planted, and there are a good many in the lower part of town. Carolina poplars (*Populus Caroliniana*) there are also in less numbers, and scarcer still are other species (some of them represented by one single specimen.) Such is the case for *Ulmus Americana*, of which a truly magnificent tree is in the garden of Mrs. Judge Fernald, on Haley street. At the same place are to be seen also the finest locust tree (*Robinia pseudo acacia*) and the finest black walnut (*Juglans nigra*). *Catalpas* and *Paulownias* have been most sparingly planted: of this latter the largest I know being at Ellwood. Of *Pircunia dioica* (the *ombu* of the pampas, and *bella sombra* of all Spanish-speaking countries,) there are a few in town, and older ones at Goleta. The so-called Texas umbrella (*Melia azedarach var: umbraculifera*) is perhaps the most frequently planted among deciduous trees, but I must say that here it does not do so well as in other parts of California. In our neighborhood where the most of deciduous trees are to be

seen, is at Carpinteria. There a man of artistic tastes, and a truly enthusiastic amateur of plants, (the late Prof. Ford) had planted quite a number, and that is the only place in Southern California where one can see good-sized specimens of *Magnolia macrophylla*, and two or three more species; of *Laurus sassafras*, of several Maples, of *Tilia Americana*, *Sophora japonica*, and others, all of them growing very vigorously, although somewhat too much crowded together.

FLOWERING SHRUBS.

While trees, both evergreen and deciduous, have been planted so sparingly, there is ample compensation in the number of flowering shrubs which really form the pride of Santa Barbara, enshrining as they do our gardens with a never-ceasing and multi-color succession of bloom. Their name is legion indeed, and to enumerate them all is far from being an easy task.

In connection with this section of plants there are some peculiarities, undoubtedly due to our climate and location, which are well worth of special remark. First: that number of shrubs originating from colder and moister countries, like Japan, Chile and New Zealand, which on the Riviera and other parts of Southern Europe can be grown only in the shade, here thrive better in the open sun: such being the case with Camellias, Daphnes, Fuchsias, and Veronicas. Second: that several of them, which in their native habitat have a well defined and comparatively short period of blooming, here are apt to become ever-blooming: the most striking example of this being the so-called Spanish Broom (*Spartium junceum*), very likely because the flowers are produced on the new wood, and this is being formed all the

year around. To put a plant at rest and to push it to bloom even out of season by totally withdrawing, or liberally administering water, is a practice well known to gardeners in all parts of the world; but here this continuous blooming appears to occur even in very different conditions. What a field to investigations on vegetable physiology is open in this country!

Abelia rupestris? is rather common, and blooms at different times during the year. Of *Abelia triflora?* (a most exquisite plant) I know only one specimen at Mr. Ford's in Carpinteria.

Abutilons are to be seen everywhere in great variety, and literally blooming all the year round. Of the smaller growing Acacias, *A. armata, A. cultriformis,* and *A. Farnesiana* are known since long: a much larger number we have introduced lately. *Achania malvaviscus* is an inmate of all old fashioned gardens, probably introduced from Mexico in the olden times. *Acokanthera* or *Toxicophlæa spectabilis,* from the Cape, is seen in several places: *A. Thunbergi* is less frequent.

Bouvardias are quite at home here, and, if properly treated, may be had in flower all winter.

Berberis aquifolium, commonly called in California Oregon Grape, and a native of the higher ridges of our mountains too, is rather common: other kinds have been sparingly introduced of late years.

Browallia (or *Streptosolen*) *Jamesoni* from Ecuador, is one of the most striking and brilliant shrubs grown here, trailing over buildings to several feet high, just as the heliotrope will do, and making an harmonious companion to the latter, being covered all the year round with bright orange red flowers.

Bursaria spinosa from Tasmania is to be seen in several gardens, and is very noticeable for its pretty white fragrant flowers appearing in summer and by the curious seed pods

similar in shape to *Capsella bursa pastoris*, the Shepherd's Purse which is considered to be the most widely distributed weed in the world.

Cajanus indicus, the Catjang of India, or Congo Pea, as it is called in Jamaica, grows finely in Mr. Gillespie's grounds at Montecito, coming up freely from self-sown seeds. Its pretty yellow and crimson flowers make it very attractive, besides the interest it may present as economic plant.

Camellia japonica, as mentioned above, stands this climate better than in many parts of Southern Europe, but has never been much grown here, owing perhaps to the rather indifferent varieties introduced from Japan, which are not likely to find many admirers. What I believe to be the largest and oldest Camellia in Southern California was planted some 20 years ago by Mr. S. Bond at Montecito, and has been moved lately to a more suitable location with perfect success, though roots were to be cut as thick as a man's wrist.

Cassia tomentosa appears to have been introduced from Mexico a long time ago, and is to be found in every garden, and although somewhat coarse in habit, is very effective for its everblooming qualities. *Cassia corymbiflora* from Southern America is less common, other kinds having been only recently introduced. Exceedingly pretty and quite distinct from other kinds is *C. artemisioides* from Australia, with silvery gray leaflets of which a fine specimen is at the corner of Gutierrez and Chapala streets.

Cestrum aurantiacum, from Central America, is rather common, and more still are other red flowered kinds or varieties, not so common the less showy but deliciously nightly scented *Cestrum nocturnum*, and the daily scented *C. diurnum*.

Choisya ternata, although a native of neighboring Mexico, and known in Europe good many years, is making its

way only at present, but is sure to become a general favorits for its pretty white orange looking flowers produced here at different seasons. The same to be said of its near relative the fragrant *Murraya exotica* a native of China and Eastern India.

Of the so-called Rock Roses, mostly from the Mediterranean region, several grow to perfection here, amongst them *Cystus cyprius, C. ladaniferus, Rhodocistus Berthelotianus,* their flowers appearing very early and for a couple of months being the finest ornaments of the most dry places.

Clianthus puniceus from New Zealand, is in early spring most conspicuous in every garden. *Corchorus* (or *Kerria*) *japonicus* has the same season of blooming, the double variety being the commonest here as in Europe.

An undetermined species of *Coronilla,* probably from the Mediterranean region is quite common in Santa Barbara, flowering freely all the year round as well as its variegated form.

Cydonia Japonica, the Japanese or flowering quince, grows to perfection, and as it is to be expected opens its bright red flowers as early as November, or generally after the first rains.

Cytisus laburnum, the common laburnum of Northern Europe is not commonly planted, but does much better here than could be expected; other kinds of *Cytisus* have been introduced only lately by us in Montecito.

One of the most attractive evergreen shrubs is certainly *Daphne Indica,* from Japan, China and Northern India, and it is really remarkable how it can be grown here in full sun, while it is such a difficult plant to manage on the Riviera.

Datura suaveolens makes quite a contrast with the preceding, with the boldness of its foliage and the fragrance of its large flowers, angel's trumpets, as they are commonly

called. This very likely was introduced from Mexico many years ago, and grows to a regular tree, bearing flowers all the year round.

Quite as common, but of more recent introduction is *Diosma ericoides* from the Cape of Good Hope, which bears here the poetical name of "Breath of Heaven," and it appears indeed, as a divine emanation in the chaste beauty of its myriads of pure white flowers.

Duranta Plumierii, from the West Indies, admired as much for its pretty blue flowers as for its golden berries produced in such profusion, is not rare; not so the white variety which is more common in other places of Southern California.

Erythrinas or Coral trees, as they are usually called, are represented in Santa Barbara by the well known *Erythrina cristagalli* growing to large size and making a gorgeous display with its flaming bunches of flowers—a dozen or more kinds have just been introduced by us in Montecito.

Escallonia floribunda? is very common and certainly one of our best summer flowering shrubs. Another spring flowering species with bright pink flowers and a summer flowering one with rose colored flowers are more scarce.

Euphorbia splendens and *E. jacquiniaeflora* are frequent, specially the first displaying its bright red bracts all the year round.

Exochorda (or *Spiraea*) *grandiflora* from China is common and does better here than in the gardens of the Riviera.

The curious *Fabiana imbricata* from Chile, a solanaceous shrub often mistaken for an *Erica* grows to perfection here and blooms several times in the year.

Everybody knows how well the different kinds of Fuchsias grow all along the Pacific coast, and in the open sun too, bearing flowers all the year round. Besides

the garden varieties issued from Peruvian and Chilian blood, *Fuchsia boliviensis*, *F. corymbiflora* from South America, and *F. syringaeflora* from Guatemala are not rare, and do equally well.

Gardenias are not planted as much as they would deserve, and need perhaps some special attention before they get well established.

A *Genista* going under the name of *G. canariensis* is very common and makes a fine show during winter and spring. Several other kinds we have been introducing of late and they are sure to prove among the best additions to the brightness of our gardens.

One cannot help mentioning here one of the prettiest under shrubs of our hillsides, *Gilia Californica*, as it is at times successfully transplanted in gardens, and few exotics surpass the grace of its large pink flowers, appearing nearly in every month of the year,

Of *Grevillea Banksii* there is a beautiful specimen in Mr. Charles Edwards' garden, Valerio street, and there is no doubt that the numerous species of this genus all conspicuous either by their flowers or by the elegance of their foliage, are going to thrive to perfection here.

To the same multiform order of Proteaceae belong the Hakeas, of which quite common in Santa Barbara is *Hakea pugioniformis*, at some distance to be mistaken for some dwarfed Pine. *H. eucalyptoides* has broader phyllodes and somehow the habit of a bamboo, quite remarkable for its elegant pink and cream colored flowers.

A most conspicuous shrub during winter is *Hardenbergia monophylla* with pure white flowers, and another less effective and similar in habit but with purple flowers. Both are different from other Hardenbergias or Kennedyas in being shrubby, not climbers.

The Heliotrope cannot be overlooked in this review being one of the most common and most attractive among

foreign shrubs grown here, and I really do not know of any country where it will attain larger size and show more vigour of growth.

Different varieties of *Hibiscus rosa sinensis* are among the most showy ornaments of our grounds, and in the most sheltered localities will keep on blooming all through the winter, but they are certainly at their best during the summer and autumn months. Other kinds of *Hibisus* are to be seen occasionally, the most remarkable being one growing quite to a tree and bearing a profusion of large white flowers with crimson eye, which I suggest may possibly be *H. heterophyllus* from tropical Australia, and I have never seen it out of Santa Barbara.

Few plants are more popular than Hydrangeas in the eastern states as well as in some parts of Europe. On the Riviera they are grown only in the shade: here they do splendidly in the open sun, as shown by a specimen in Mr. C. F. Eaton's grounds at Montecito, which last summer had more than six hundred heads of flowers open at the same time.

Ilex aquifolium in varieties, (the common English holly) has been sparingly planted and those few plants do well generally, showing what I would call the "elasticity" of this climate.

The crape myrtle (*Lagerstroemia indica*) in varieties has been planted, but not too plentifully, here, perhaps on account of its being deciduous, and I do not know of its having run wild, as it appears being the case in several spots in Florida and even in Georgia.

Lantanas are more likely to spring up from self-sown seed, but it does not appear they will ever become a troublesome nuisance as is happening in Ceylon and other tropical countries.

Lagunaria Patersoni, from Norfolk Island, is not unfrequent and very ornamental for its pyramidal shape and

immense number of cream colored, dark eyed, flowers. It would be more extensively planted, was it not for its being too likely to be attacked by black scale.

Quite an aristocratic plant to be seen only in a few gardens up to now, and a very striking object to behold is *Lasiandra floribunda* or *Pleroma macranthum* from South America.

Laurus nobilis, the so-called Sweet Bay from Southern Europe, is most sparingly grown, perhaps on account of resembling too much the native bay, *Umbellularia Californica*, which grows larger, however, and has a much more pungent smell.

The common Lavender (*Lavandula spica*) is planted much, developing here at least the same amount of fragrance as in its native country.

Lavatera assurgentiflora, a native of Santa Catalina and San Clemente Islands, is being planted a good deal, mostly near to Spanish or Mexican houses, and makes a beautiful small tree either with its peculiarly green foliage or with its crimson flowers.

The Lion's Tail (*Leonotis leonurus*) from Southern Africa, bears its orange whorls of flowers nearly all the year round, and is very effective when in large masses.

There are, I believe, more than one kind of *Leptospermum* growing here (the so-called Australian Tea) and their white flowers are very pretty in early spring.

Libonia floribunda, which is much grown under glass in Europe as a market plant, grows and blooms to perfection here all through the winter.

Lippia (or *Aloysia*) *citriodora*, the lemon-scented verbena from Peru, is one of the oldest and most popular inhabitants of our gardens, attaining the size of a tree.

A telling example of the vigour with which exotic plants will grow here is shown by a specimen of *Mackaya bella*, being a compact bush seven feet high and about the

same in diameter, to be seen in Mr. J. W. Calkins' garden, Santa Barbara street. This shrub was introduced from Natal not many years ago, and has large pretty lavender flowers.

Of Australian *Melaleucas* there are at least four different species, with flowers pure white, scarlet, lilac, and a most peculiar one, looking like a juniper and having sulphur yellow flowers. This has recently been identified at Kew as *M. micromera*, a rare kind from Western Australia, not grown, I believe, in European gardens.

The next allied *Callistemon* or Bottle Brush trees as they are commonly called, are represented by two or three species which I have been unable to identify up to now.

Myrtus communis, from the Mediterranean, the classical shrub sacred to Venus, is very popular and is one of those which are constantly in bloom.

A species of *Myoporum* (perhaps *M. laetum*) from New Zealand has been introduced many years ago, and attains the size of a tree, most remarkable for its shining leaves like perforated with translucid dots, its pretty white flowers, and the beautiful lilac color of its berries.

An old inmate of our gardens must be also *Nandina domestica*, the so-called Sacred Bamboo of the Japanese, although it is not a bamboo, and not even looking at all like a bamboo, to our eyes at least.

Different varieties of Oleanders, *Nerium oleander*, have been introduced, and ought to be one of the finest ornaments of our gardens, was it not for their being so severely attacked by the black scale.

Olea fragrans, the sweet scented olive from China and Japan, is not so frequent as it ought to be, specially considering that it will perfume our gardens all the year round.

Pelargoniums or Geraniums as they are ordinarily called, are so common as to escape notice. Several species are to be seen in our gardens, the most spread being of course the

innumerable varieties of *P. zonale*, flourishing under the most adverse conditions. But what is really remarkable is the freedom with which will grow and bloom all the year round the varieties of Pelargoniums proper, not at all easy to manage in Southern Europe.

Of the North American genus *Philadelphus*, or Mock Orange, two or three species are sparingly planted, being deciduous, and are growing and blooming well.

Phylica ericoides from the Cape of Good Hope, having somewhat the appearance of *Diosma* is not common, but does well, like other plants from the same region.

Pimelea spectabilis from Australia, with its pretty heads of pink flowers, is one of our most elegant shrubs, and it is wonderful how it is thriving here, while it proves so difficult and unsatisfactory to the gardeners of the Riviera.

The genus *Pittosporum* is well represented in Santa Barbara gardens. *P. tobira* from China is quite common as well as its variegated form. *P. undulatum* from Australia is much planted on lawns and is most beautiful when covered with its fragrant white flowers. Less common are *Pittosporum crassifolium*, from New Zealand, growing in a pyramidal shape, its leaves covered with white tomentum underneath, and flowers of chocolate color: *P. nigricans* from New Zealand too, very pretty for the sea green color of its leaves and blackish stems: *P. rhombifolium* from North Australia with peculiar foliage and large umbels of fragrant cream white flowers, followed by berries of the brightest orange color, making the plant a most conspicuous object for several months. This species I have never seen out of Santa Barbara; and another there is, peculiar to our city, more remarkable still, of which the finest specimen is planted on the corner of Mr. Charles Edwards' garden, Valerio street. This has slender drooping branches and linear leaves, and the habit of the weeping willow, with small yeliowish flowers and yellow berries. It is a most striking plant and to

my knowledge not seen in European gardens. It has been identified at Kew as *P. phylliraeoides* from Central Australia.

The Frangipani (*Plumieria*) from the West Indies and Mexico, have made their appearance quite recently and appear to do very well.

Poinciana Gilliesii, from the River Plate, is a common shrub, by some people called "bird of paradise," and often confused with the more beautiful *P. pulcherrima*, which I am not aware having bloomed here, but ought to do well in our warmest nooks, together with *Poinciana regia* and *Colvillea racemosa*, the "flamboyant" of Madagascar.

Few plants are more popular, and deservedly so, as the *Poinsettia* or *Euphorbia pulcherrima*, the "flor de pascua" of neighboring Mexico, being at its best for Christmas. This plant does wonderfully well on this coast, heads of two feet across, having been measured by myself.

A perpetual bloomer, and very pretty, too, is *Polyyala myrtifolia*, from the Cape of Good Hope, most useful also for cut flowers.

Raphiolepis Japonica, or *ovata*, from Japan, a close relative of the quince, but with thick, evergreen leaves, white fragrant flowers, and bluish berries is most extensively planted here.

A beautiful specimen of *Rhodorhiza florida* from the Canary Islands, is blooming nearly all the year round in the garden of Mr. Charles Edwards, Valerio street, where so many choice shrubs are grown. This is a sort of shrubby convolvulus, with silvery leaves and large bunches of white flowers, tinged with pink. From the trunk and root-stock, "Lignum Rhodium," the well known rosewood is obtained.

Although hardly to be called woody, are to be mentioned here *Reinwardtia* or *Linum trigynum*, with bright golden flowers, introduced long ago, and *R. tetraygna* more recently known, and more floriferous, too.

Rhopala Corcovadensis, from Minas Geraes in Brazil,

grows most vigorously in Mr. F. W. Gillespie's grounds at Montecito, and is another striking example of our possibilities in the line of plants considered difficult or unmanageable altogether in other countries.

Rogiera cordata, and *R. gratissima*, from Guatemala, with pink, sweet-scented flowers, do well, having been introduced only of late years.

The common rosemary (*Rosmarinus officinalis*) from Southern Europe, is quite rare. In a few gardens there are plants of a native rosemary, (*Trichostema lanatum*) powerfully aromatic, and with very pretty flowers, well worth introducing in gardens of other countries.

The shrubby species of *Salvia*, mostly from Mexico and the temperate regions of Central and Southern America, are quite numerous and form one of the richest decorations in the gardens of Southern Europe during winter. Here, instead, they are rather scarce. Still we have *Salvia splendens*, *S. leucantha*, *S. ianthina*, and a few others, among them one with vermilion flowers forming a small tree, which from the same obliging authority I hear to be *S. Sessei* from Guatemala and Southern Mexico, a truly magnificent species. We have been introducing many other kinds, as Salvias are sure to be among the easiest grown, and most useful plants for winter blooming.

Neither of the shrubby *Solanums* there are many. In Montecito *Solanum marginatum* with white foliage and light yellow fruits is quite common. At Mr. Sawyer's place there is a tree of a species referred to *S. Indicum*. The most common of all is *S. betaceum*, or *Cyphomandra*, the tree tomato, the fruits of which have, in my opinion, more ornamental than culinary value.

Sparmannia Africana, from the Cape of Good Hope, is not frequent,—but it is sure to become a general favorite for its rich foliage and its snowy white flowers produced so abundantly during the winter months. The double variety

has been introduced quite lately, The so-called Spanish Broom (*Spartium junceum*) of Southern Europe, as mentioned above, is literally never without bloom. The English Broom (*Sarothamnus scoparius*) is less common, and its beautiful variety *Andreanus* (known also as *Genista Andreana*) has been introduced by us last year.

Spiraea Reevesiana from China, usually called bridal wreath, is seen everywhere, and bears its pretty flowers all the year round. *S. prunifolia* with double flowers is not so common, and there are two or three more species scarcely represented however.

Sutherlandia frutescens from the Cape of Good Hope, with brick red flowers, is not very common, and there is also a white variety, not to be confused with the following.

Swainsona galegaefolia, from Australia, forms a dwarf compact shrub, covered all the year round with panicles of pure white flowers. No doubt it is a pretty thing, useful also for cutting, but it has no fragrance at all, and I would say it has been rather overdone by our eastern brothers, there being better things to be grown in the same line, on this coast at least.

Syringa vulgaris, the common lilac is not planted much, as in most cases it does not prove too satisfactory. By withdrawing water after its blooming, so as to make the plant have a compulsory rest, I believe that also this favorite shrub ought to be brought to flower to perfection here. Besides the white variety I do not think any of the improved modern varieties have been introduced yet.

Talernaemontana coronaria, from India, with white fragrant gardenia like flowers, has just made its appearance in our gardens, and judging from how it behaves in other parts of Southern California, is sure to become one of their best ornaments.

Quite conspicuous in early spring for the feathery mass of light pink flowers, is *Tamarix plumosa*, from Japan. This

like other tamariscs, are among the easiest plants to grow, as they will thrive everywhere, even in the most saline and alkaline soils.

Tecoma stans, the Palo de Arco, of adjoining Mexico, and a native too of Southern Texas and Lower California, produces its bright yellow flowers in great profusion for many months of the year. Not much different but more scarce, is *T. velutina*, from India, and much more common than both, is *Tecoma capensis*, from South Africa, half shrubby and half climber, its orange red flowers to be seen here in all seasons. *Tecoma Smithii*, the remarkable hybrid raised between the two preceding by Mr. A. Smith of Adelaide, South Australia, has been introduced by us and ought to do as well as its parents.

Teucrium fruticans, from Southern Europe, with silvery foliage and pretty blue sage like flowers, grows to immense bushes very valuable to beekeepers.

Thevetia neriifolia from West Indies, by some people called the yellow oleander, does well with us, and the same may be said of another undetermined species, very similar in habit, but with salmon colored flowers.

Among so many gorgeous and tropical looking shrubs inhabiting our gardens not unfrequent and pushing to look at its best in such a selected company, is the most humble gorse or furze, *Ulex europaeus*, from Northern and Central Europe. Its being so frequent here appears to derive from the large number of Scotch gardeners there are in this country.

Several varieties of shrubby *Veronicas* we have in our gardens, doing finely in the open sun, a proof and a hint that also plants from the cooler and moister climate of New Zealand find congenial medium here.

Quite common in Santa Barbara as well as all over Southern California, is the so-called Laurustnus, *Viburnum tinus* from Southern Europe, or rather a special form of it

with more acuminate leaves and smaller umbels of flowers. Whether it is indeed a poor variety that has been spread here, or its uninterrupted blooming may affect its natural beauty it is hardly possible to tell.

In the above enumeration of flowering shrubs not less than one hundred and fifty different species have been mentioned, not taking into account the innumerable varieties; and among them are representatives of all parts of the world, meeting here side by side to their great surprise, and to the delight of our senses and of our minds. Whatever large their number may appear, it is quite insignificant in reference with the possibilities we have to gather here the "cream" of the finest productions of the flora of every land.

CLIMBERS.

Climbers or "vines," as they are usually called in the United States, keeps pace with flowering shrubs in beautifying our gardens, and, by their mode of growth may be said to occupy in fact a more prominent place, while not unfrequently they are performing a most charitable work in concealing what would be not too much admirable architectural lines. How vigorous most of them grow here is a thing that must be seen to be fully realized.

Akebia quinata from Japan, is much planted, although not a showy plant for sure, and more noticeable for its beautiful foliage than for its dull colored flowers

Allamandas have been put on trial quite lately, and will succeed only in the most sheltered locations.

Araujia or *Physianthus albens*, the cruel vine as it is called by some on account of the nocturnal moths which are seen hanging hopelessly entrapped by its flowers, is rather frequent, although it has not much beauty to recommend it. *A. grandiflora* (or *Schubertia*) with large fragrant flowers has been introduced only of late.

Aristolochia elegans, a recent introduction too, is a gem among its most curious relatives and has the advantage of being practically odourless, a good point in that ill scented family.

Antigonon leptopus, the "San Miguelito" and "Rosa de Montaña," of Mexico, and such a popular plant there, strange to say, has found its way here only lately, and is not at all common up to now.

Asparagus plumosus from South Africa, is very much planted; a specimen on Mr. Charles Edwards' house, Valerio street showing well what an elegant and desirable plant it is.

Ampelopsis tricuspidata or *Veitchi*, from Japan, in this country curiously baptized "Boston Ivy," is very popular, although deciduous for about four months, and is very remarkable for the varied bronze color of its leaves during summer and autumn. *Ampelopis quinquefolia*, the Virginian Creeper, is much less in favor, and in fact it never displays well here the fiery colors of its dying leaves.

The genus *Bignonia* brings in a large contingent of different species, among the most useful and conspicuous in this class of plants. First of all *Bignonia venusta* from Brazil, covers with brilliant orange trusses of flowers many roofs and verandas from September to May. *Bignonia Manglesii*, from Australia, with shining, finely cut leaves, produces in early spring its delicate straw-colored flowers powdered with red. *B. tweediana* from the river Plate, clings to rocks

and walls, just as the ivy will do, and has the most golden colored flowers one can imagine. A worthy companion to it and blooming at the same time is *B. speciosa*, from Uruguay, which has broad, shining leaves, and large lavender colored flowers, striped with purple. *B capreolata*, from the Eastern States, is too much modest looking and cannot compete with its more brilliant sisters *B. radicans* is rather common too, its flowers attaining here very large size. Quite recently many other desirable kinds we have been introducing ourselves, namely *B. magnifica*, *B. Chamberlayni*, *B. argyreoviolascens*, *B. thunbergiana* and *B. Thwaitesi* with yellow flowers; *B. cherere* and *B. floribunda* with red flowers.

Bignonia (*Tecoma*) *jasminoides*, from Australia, is here one of the most popular climbers, and lately a variety has been introduced with larger and pure white flowers, blooming profusely all the year round, also when very young. Of late years we have had also *Tecoma Mackenni*, from South Africa, an immense grower, with admirable foliage and large bunches of delicate, lilac pink flowers.

Two more climbers belonging to the *Bignoniaceae* are rather common in our gardens, one being the Mexican *Pithecoctenium muricatum* with woolly yellow and white flowers, the other being the Chilian *Campsidium Valdivianum* with fern-like leaves and orange flowers.

Pithecoctenium clematideum from South America with light green foliage and pure white fragrant flowers has been introduced by us.

Of *Bougainvilleas* we have two distinct forms in our gardens; one with smooth glossy leaves and mauve purple bracts, known as *B. glabra*: the other with rather woolly leaves and bracts of a deep magenta color, going under the name of *B. spectabilis*. Both are free-bloomers; and the later may be called everblooming. Quite recently *B. lateritia* has been introduced, and it promises to become very popular

on account of its more subdued and harmonizing shade of color, which is not exactly brick red, as the name would imply.

A very common climber here, like in other parts of California, is *Boussingaultia baselloides*, from Chile, strangely enough baptized in this country "Madeira Vine." It has not much beauty to recommend it, and furthermore stems die off in winter; but it is such a fast grower to cover unsightly places, and its small white flowers smell so nicely of bitter almonds, just like the flowers of the "Loquat" appearing at the same season.

The night blooming *Cereus* from Mexico, *C. grandiflorus* and *C. Macdonaldiae* do splendidly here, as it is to be expected, their immense fragrant flowers being produced quite freely.

Cissus discolor from Java, has been grown in some of the most protected locations, but of course it will be only where heat, moisture and shade combine together, that it will show to best advantage. Lately we have introduced the curious fleshy leaved *Cissus incisa*, called "Yerba del Buey," in Mexico and Southern Texas.

Quite a number of garden varieties of *Clematis* we have, well exemplifying the peculiarity of this climate, and many of them are indeed everblooming. Still better they are sure to do if grafted on the roots of our most vigorous native kinds, *C. ligusticifolia*, and *C. lasiantha*.

Clitoria Ternatea with its pretty blue flowers is seen at times, but is not common.

To adjoining Mexico we owe also *Cobaea scandens*, somewhat common looking, but very useful wherever an immediate effect is required.

Delairea scandens (or *Senecio mikanioides*) a sort of trailing groundsel, from Southern Africa, with fleshy ivy looking leaves and yellow flowers, is quite common, and effective to cover rocks and embankment. It bears the

curious name of "German Ivy!" in this country.

A beautiful climber with long trusses of pea shaped bright scarlet flowers, *Dioclea glycinoides* from River Plate, much prized in Southern Europe, strange to say had remained quite unknown to this country and only last year has been introduced by us.

On the contrary much more common here than in Southern Europe is another leguminous climber *Dolichos lignosus*, from India, misnamed in California as "Australian Pea." It is a rank grower and very pretty, mostly in early spring.

Eccremocarpus scaber, a half herbaceous bignoniad from Chile, having pretty orange flowers, has been introduced since long, but is not much seen altogether.

Neither common are the different varieties of *Eleagnus*, from Japan and China, to be found occasionally in our gardens. *Ficus repens*, from the same countries, is more known, but not so extensively used here as in Southern Europe.

The Virginia or Carolina jessamine, *Gelsemium sempervirens*, from the southeastern states, with deliciously scented yellow flowers, although an old inhabitant of our gardens, is but rarely seen. The double flowered variety has been introduced by us.

Glycine Sinensis, or Wistaria, as it is more usually called here, from China and Japan, is a striking plant in very early spring producing occasionally scattered bunches of flowers later in the season. The white variety does better here than in Southern Europe. At Carpinteria, in the grounds of late Professor Ford, is to be seen the only specimen I know of in the country of *Glycine multijuga*, from Japan, a more elegant plant, I believe, the flowers being of two different shades of lilac, and borne in bunches more open and over two feet long. A beautiful engraving of this *Glycine*, little known here, appeared in the Pacific Rural Press, from

a photograph taken in Japan.

The common ivy, *Hedera helix*, from Europe, has become quite acclimatized, growing with utmost vigor as can be seen at the old Hollister ranch, beyond Goleta.

Different kinds of *Ipomaea* are known in this country under the name of "morning glory," or of "moon flower," according to their blooming either at night or in the early hours of the morning, this distinction not being so rigorous here on account of the foggy days we have in summer. Many species and varieties have been introduced at different times, and I must confess not having been able to discriminate them completely up to now. Perhaps the most common is *Ipomaea Learii* from South America, an immense grower, in bloom for eight months at least, its large flowers being nearly blue when they open, and turning to purple in the afternoon, more or less according to sunshine. *I. Mexicana*, a smaller plant with somewhat purple, pinkish flowers is common too. Only an annual, but so attractive for its enormous flowers of the truest sky blue, is *I. rubrocoerulea*, from Mexico, which has been sold in California as "I. heavenly blue," an imaginary cross between *I. Learii* and *Mina lobata*. The true moon-flower, *I. grandiflora*, with pure white flowers having a very long tube and exquisitely fragrant at night, is not common at all. Quite a number of *Ipomaeas* we have been introducing and expect to bloom this year in Montecito. Among them, *I. aurea*, from Lower California, described as covering bushes and trees with a mantle of gold.

Several kinds of jessamines are to be seen in our gardens, some of them like *Jasminum officinale* and *J. grandiflorum*, probably introduced by the missionaries; others are more recent acquisitions, among them *J. ligustrifolium* and *J. gracillimum*: of the yellow flowered ones, *J. Wallichianum* (*J. triumphans* of gardens), shrubby rather than climbing, is very common, and in bloom all the year round; *J.*

nudiflorum instead is not much seen. What is really remarkable is the freedom with which *J. sambac* (more correctly *Mogorium*), the goa jasmine from India, grows and blooms here, this being considered a rather difficult plant to manage in Southern Europe.

One or two species of *Kennedya* from Australia, are grown in Santa Barbara, which I have not been able to identify, and there is hardly any doubt that the numerous species of this beautiful genus of pea flowered vines will do finely here.

Lapageria rosea, from Chile (one of the most aristocratic climbers to be sure) has been introduced years ago and does well, but is far from common. The white flowered variety I have never seen yet in bloom in Southern California.

Although not an exotic plant, because a native of arid regions in San Bernardino and San Diego counties, I cannot abstain from making special mention of *Lathyrus splendens*, appropriately called "the pride of California," which has made its appearance in our gardens quite lately. Its large crimson flowers are produced in profusion during winter and spring, and if allowed to trail freely over bushes or rocks, few other plants can compete with it, as can be seen by the numerous specimens in the grounds of Mr. F. M. Gallaher, in Montecito.

The number of honeysuckles (*Lonicera*) to be found in our gardens is rather larger, most of them being evergreen and everblooming. Strange to say, the typical species, *Lonicera caprifolium* from Southern Europe, perhaps the most sweetly scented of them all, appears never to have been introduced, probably because of deciduous habit.

Not quite common, and not a very showy plant neither, is *Lycium Sinense*, or *barbarum*, from China, known in this country under the curious name of "Matrimony Vine." A prettier species is *L. Richii*, from Lower California, of which one very large but solitary clump exists on the beach of

Santa Catalina Island. This when more known will certainly prove a valuable introduction also to the gardens of Southern Europe.

Mandevilla suaveolens, or Chilian jessamine, as it is generally called, grows splendidly here, and bears much larger flowers than in Europe, and blooms earlier, its only drawback being that its season of blooming is not very long, and that it is deciduous. This, (and the same may be said of other deciduous climbers) is easy to overcome, planting them together with evergreen kinds, harmonizing in color, or blooming at different seasons of the year.

Quite lately *Manettias* have made their appearance in our gardens, and very pretty they are, *M. bicolor*, and *M. cordifolia*, both from Brazil.

Maurandias in varieties are to be found, but not very common, to be sure. Neither common is the curious *Muhlenbeckia complexa*, from New Zealand, looking something like a gigantic grey colored dodder.

Passifloras, or passion vines, as they are commonly called, are quite a feature in Santa Barbara, and a matter of wonder to visitors from abroad. *P. manicata* from Brazil, with vivid scarlet flowers is seen everywhere, and a rank grower is not to be found for sure. *P. princeps*, or *racemosa*, with long bunches of red flowers is a much admired plant, and far from common. There are two forms of it here: one with white corona, the other with blue. The common *Passiflora coerulea* of the Eastern States is grown very little in Santa Barbara: rather common being instead its white variety, *P. Constance Elliott*. Besides those mentioned already among fruit bearing plants, several other Passifloras with doubtful names are to be found occasionally in our gardens, and a much larger number of choicest species or varieties, we have been introducing ourselves, feeling confident that they cannot fail to become very popular. The same remark applies to *Tacsonias*, closely allied to

Passifloras, and for the general public hardly distinguishable from them. Of these the most common goes under the name of "Pink Tacsonia," and I have been unable to identify it up to now. Hanging in graceful festoons of rich light green foliage and abundant rosy pink flowers, succeeded by large oblong orange colored fruits, it is indeed a feature in our gardens. Less common but more beautiful still, are *T. Van Volxemii*, from Columbia, showing at its best where its rich crimson flowers are allowed to hang down freely from their long thread like pedicels, looking as a flight of butterflies, and *T. Jamesonii*, from Ecuador, with intense salmon colored flowers.

Although so popular in all Spanish speaking countries, *Phaseolus caracolla*, the snail vine, from Peru, is not seen much in our gardens, as it would deserve it on account of the delicious scent of its odd shaped flowers.

Plumbago capensis from South Africa is one of the most common climbers here as everywhere in Southern California, and stands unequalled for the light sky blue color of its trusses of flowers produced nearly all the year round. A white variety has been introduced quite recently. The pink Plumbago, *P. coccinea* from Madagascar has been introduced too, but I have been unable to see any well established specimen in the open ground.

Rhynchospermum or rather *Trachelospermum jasminoides*, from China, sometimes called the China jessamine, is not unfrequent, but hardly as common as it is in Southern Europe.

Neither common at all is the pretty *Rubus rosaeflorus* from the mountains of Java and other parts of Southern Asia. It is only a bramble, but admirable indeed for its elegant foliage and its pompon like extra double white flowers.

Another striking climber which, although not new, is just beginning to find its way in our gardens is *Solandra*

grandiflora, known also under the name of *Brugmansia sarmentosa*, from Jamaica. Its flowers are somewhat in the shape of those of *Brugmansia suaveolens*, the well known angel's trumpet, but longer still and similarly fragrant.

The genus *Solanum* to which the ordinary potato belongs, contributes to our gardens three first rate climbers. The grandest of them *Solanum Wendlandi* from Costa Rica, is of quite recent introduction and appears to have been grown in gardens in California before it was known in Europe. When in bloom it is truly a magnificent plant, and the grandest of all Solanums. *S. Seaforthianum*, or *azureum* of American catalogues, a native of Mexico and West Indies, is of recent introduction too, and bears blue flowers like the preceding, but smaller and in bunches like those of the more known *Solanum jasminoides* from South America. Of this last we have also a form with variegated leaves, and another with larger pure white flowers, being a more profuse bloomer than the ordinary type.

Introduced since long but not much seen is *Sollya heterophylla*, from Australia. Its willow like leaves and blue bell shaped flowers would hardly make one believe it to be such a near relative of the Pittosporums so plentiful in our gardens.

Smilax aspera, from South Europe, one of the sarsaparilla yielding plants, is rarely met with here. Other species from warmer countries, more ornamental for their leaves than their berries, are yet to be introduced.

Neither common at all is *Stauntonia hexaphylla*, from China and Japan, with very distinct evergreen foliage, and white fragrant flowers. *S.* or rather *Holboellia latifolia* from the Himalayas, has greenish powerfully scented flowers, succeeded by large purple fruits, said to be very good to eat. Unfortunately seeds of this appear to retain their vitality for a very short time, and our efforts to introduce this most desirable plant have failed up to now.

One of the noblest climbers one can grow, either for its neat foliage or for the beauty and fragrance of its white flowers, is certainly *Stephanotis floribunda*, from Madagascar, quite at home with us, but not so spread yet as it ought to be.

Stigmaphyllon ciliatum, from Brazil, so remarkable for its fragrant, odd shaped yellow flowers, to be mistaken easily with those of some orchids, was introduced here some fifteen years ago, but is not frequently seen.

Without mentioning the common *Thunbergia alata* in different varieties which will come up easily from self sown seed, special notice must be made of the most beautiful *Thunbergia grandiflora*, from India, being perfectly hardy here. The vigor with which it grows and the beauty of its light blue flowers are not easily forgotten when once seen.

More humble to be sure and scarcely noticed because so common (to have become a troublesome weed in many cases) are the different varieties of the common nasturtium (*Tropaeolum majus*) originally from Peru. For covering walls, rocks, fences, etc., without requiring any care, they are unrivalled, indeed.

Another good plant for bordering is the variegated form of *Vinca major*, from Southern Europe, which here thrives well and bears abundantly its pretty blue flowers, even in the open sun.

THE ROSES.

To write exhaustively and appropriately of roses, how they are growing in Santa Barbara, would need more space

than these notes can afford, and the pen of a Dean Reynolds Hole, or of some other eminent rosarian. In fact among the numberless and multi-color flowering plants gathered here from all corners of the world, the rose stands an undisputed queen, no other flowers being so extensively planted and repaying more what attention is bestowed upon them with a profusion of bloom for twelve months in the year. During the recent flower festival, roses were used in decorations literally by the hundreds of thousands, if not by the million, and it is no exaggeration to say that going about town in those days no trace of such unheard-of ransacking was to be perceived. Roses are general favorites here and are planted everywhere, the faculty with which they are propagated being such that there is hardly any girl six or seven years old, who cannot claim to be a good hand to make "slips," as cuttings are called in this country. Quite remarkable it is also, how large plants can be moved without injury and without hardly interfering with the blooming. Last July, I have seen myself one hundred and more big rose bushes, some four and five years old and of different varieties, transplanted without any particular care. None of them was lost, and ten or fifteen days after the moving they were blooming more profusely than ever in their new quarters.

Not all sections of roses appear however, to do equally well. Thus moss roses are liable to lose their moss, and hybrid perpetuals appear to be instead very short lived.

As it is to be expected, climbing roses are the most prominent of all; among them *Lamarque*, standing the first, and covering with a sheath of bloom the tallest buildings all through the year. The Banksian roses (*Rosa Banksiæ*), both the yellow and the white double form, grow also with utmost vigor, their season of blooming lasting much longer than one is accustomed to see in Southern Europe, and it not being at all unusual, too, for them to bloom again in the

fall. Quite lately the single white Banksia has been introduced, probably from Japan, and it is indeed an exquisite thing and so delicately fragrant. More showy, to be sure, but unluckily not partaking of the everblooming quality of the *Lamarque*, is a rose enjoying here four different names, viz: *Caroline Kuster*, *Beauty of Glazenwood*, *Climbing Ophirie* and *Fortune's Double Yellow*, this last name being the right one, as I have been informed by the obliging kindness of Mr. P. J. Berckmans of Augusta, Ga. *Marechal Niel* goes ahead of the preceding, if not for vigor, for the beauty and size of its flowers, its unrivalled perfume and everblooming qualities. *Reine Marie Henriette* is exceedingly vigorous too, and very showy, but lacks fragrance. *Cloth of Gold*, *Reine Olga de Wurtemberg*, *Estelle Pradez* and *Climbing Devoniensis* are much planted too, and among true pink roses one called here *Satine?* which must be little known elsewhere.

Among climbers I must not forget to mention the rather common *Cherokee Rose* (*Rosa sinica*) which is a most beautiful thing when in bloom, and very ornamental for its shining foliage all the year round. *Rosa wcschata* is most graceful and delicately fragrant, but it is not so common.

Among shrubby roses the number is larger than ever, and I must forcely mention only the most generally planted, and known to everybody. The old roses *La France* and *Safrano* are seen everywhere; also *Marie Van Houtte*, precious indeed for winter blooming (it is considered one of the very best on the Riviera); *Gloire de Dijon*: *Perle des jardins*: *Bon Silene: Papa Gontier:* and a host of others, perhaps of not less merit I must unavoidably omit.

As far as I know roses have never been grown commercially here, and now that the completion of the railway coast line is rapidly approaching and will assure more rapid connection with San Francisco and all points east, the export of cut roses during the winter months is sure to become

a very important item for Santa Barbara, and ought to attract the attention of our enterprising people.

Another and still more important matter concerning roses would be the studying of the possibilities of opening here a factory of essence or attar of roses. One point we have here that ought to be thoroughly investigated: viz. the longer season of blooming of most roses as compared with what happens in India, in Bulgaria, in Southern France and in Germany, the present seats of this industry. Let us hope the day not to be far that our people will get aware that besides superiorily beautifying our grounds, and enabling our small town to boast of the first display of flowers in the country, our fitness to grow roses may be turned to some more profitable purposes.

BULBOUS AND TUBEROUS ROOTED PLANTS.

The number of plants belonging to this section is so large that I will be compelled to mention only such as are more widely spread in our gardens, or possess far superior merits to recommend them.

The Mediterranean basin, South Africa and Japan have supplied the largest number of such plants; while not a few of our native bulbs highly prized abroad are seldom if ever seen here. So many of our Lilies, most of the Brodiæas, and all our Calochorti would be well worth growing, and once planted in proper conditions little care they will need indeed.

Among introduced plants, one of the more common is *Agapanthus umbellatus*, from the Cape of Good Hope, keeping its beautiful foliage all the year round, and bearing its

showy blue flowers on much taller stems than in other countries. The white variety is not common at all here, but hardly preferable to the type. Different kinds of *Alstroemeria* from Peru have been introduced long ago, but are hardly seen out of a few old neglected places. The *Amaryllis* is more represented, and we have here different species or varieties; the most prominent being *A. Johnsoni*, *A. Reginae*, *A. robusta*, *A. formosissima*, and more than any other *A. belladona*, here starting into bloom very early in summer. Hybrid Amaryllis, or *Hippeastrum* as they must be correctly called, are not much seen up to now, and grow to extravagant size.

Amomum cardamomum, the cardamon, noticeable not for its flowers but for the aromatic fragrance of its leaves and roots makes a very good border plant, preferably in the shade.

The bright colored *Anemones* from Southern Europe are very seldom seen; the white fall blooming *A. Honorine Jobert*, from Japan being more common; not so much the pink flowered type of the same. Two species of *Asphodelus* from the shores of the Mediterranean, *A. ramosus* and *A. fistulosus*, are not unfrequent, although they have not much beauty to recommend them.

That this is a great country for *Begonias* everybody knows, and the vigour most of them grow and bloom even in the open sun is not the least wonder of this wonderful climate. From the shrubby ones, such as *B. rubra*, down to the hybrid single and double tuberous rooted and to the *B. Rex* type, with the endless number of modern strains and hybrids, all appear to do splendidly here. A specialist who would devote time and attention to this beautiful genus would find room for improvement, and be largely repaid for his care.

The same remark applies to *Cannas*, which here have

become ever-blooming. All through the winter we have perfect flowers, both of the large flowered strain, typified in *C. Mme Crozy*, and of the tall drooping flowered ones as *C. Ehemanni*.

Canna virginalis, or *Myrosma cannaefolium*, from Guiana, which is attracting so much attention as the future eventual parent of a series of pure white or variously striped cannas, we have had growing vigorously in our grounds since last year and expect will show flowers this season.

Convallaria majalis, the poetical lily of the valley, is very little seen here, but I have no doubt it could be grown to perfection if people were to give it proper care.

Four or five species of *Crinum* are not uncommon, some of them growing to very large size, and they will need further attention to be properly identified.

Cyclamens grow here very freely, either in pots or in the open ground (in the shade, of course) but I must say they have not received much attention up to now.

Neither *Dahlias* are so frequent as in gardens of other countries. The few we have keep on blooming nearly all the year round. Most common here is the suffrutescent *Dahlia arborea*, from Mexico, like the others, being at its best in November, with immense inflorescences of large purple flowers. Strange to say *D. imperialis*, with white and crimson flowers, and of similar habit, is very scarce: the first selling often under the name of the second, by involuntary mistake, I presume.

Among recent introductions in gardens none has become so quickly popular as the *Freesia*, from South Africa, and deservedly so for its profuse blooming, refined beauty, keeping qualities and delicious scent without hardly any rivals. In Santa Barbara this little plant grows at random, although not raised here for commercial purposes, as in other parts of Southern California which have become one of the chief centers of export of *Freesia* bulbs.

In a few gardens some of the *Funkias* from Japan are to be seen delighting mostly in the shade: more common are the nearly related and more showy *Hemerocallis*, or day lilies from Southern Europe and temperate Asia.

Gladioli in immense variety are plentiful everywhere, and their vigour is unsurpassed. Occasionally some beautiful spikes are seen in bloom during the winter months, and considering the brightness of these flowers and their long keeping, this suggests that a most profitable business could be started in exporting cut gladioli during the winter months.

Not uncommon in our gardens are two species of *Hedychium*, or Ginger Lily, as they are commonly called (by some people wrongly believed to yield the true ginger, which is the produce of a different plant, *Zingiber officinale*, from West Indies.) *H. gardnerianum* with yellow and red flowers being seen the most: *H. coronarium*, with pure white fragrant flowers not so much. This to succeed well must be treated like a true aquatic plant.

Scattered only in a few places and doing rather poorly, because not properly treated, we have a few plants of *Himantophyllum miniatum*, (*Clivia nobilis.*) If some attention was given to its culture it will certainly become one of the chief ornaments of our gardens. Among the most improved varieties recently raised in Europe there will be some to be sure eminently adapted to our climate, and it will pay to work up this plant.

Hyacinths of different colours are quite common, and very likely among the oldest bulbous plants introduced from abroad.

Of *Irises* the most common is *I. Florentina*, the white flowered one, yielding the true "orris root." Very large clumps of this are to be seen in every garden, the flowers appearing in January and even earlier. It looks quite at home here. In what degree the root may possess fragrance

has never been thoroughly tested, as far as I know. Less plentiful are some varieties of *Iris Germanica*, and some also of the showy and moisture-loving *I. laevigata*, or *Kæmferii* from Japan.

In some of the oldest gardens patches of *Ixias*, and of their taller cousins the *Sparaxis* makes the most gay display in early spring. Among the inexhaustible numbers of bulbous plants from Southern Africa how many there are that only need to be introduced and will spread rapidly here and feel quite at home like the preceding!

Among lilies the most plentiful is *Lilium candidum* the "Madonna Lily" from Southern Europe, introduced at first very likely by the Franciscan monks, this being a plant that has always followed Catholic missionaries. Its season of blooming here is not at all in advance compared with Southern Europe. *Lilium Harrisii*, the Bermuda lily, comes next in numbers, but earlier in blooming, having cut myself splendid spikes for Christmas.

Not uncommon are some of the Japanese lilies, as *L. lancifolium*, and *Lilium auratum*, but not grown to any extent up to now.

Moraea or *Iris fimbriata*, from China and Japan, does well and is rather common. Very common, too, are different kinds of *Narcissus*, some of them in bloom before Christmas. These also deserve more attention.

Half a dozen different *Oxalis*, from the Cape of Good Hope, are quite plentiful here, the most attractive being *O. purpurea*, making a carpet of the most lovely pink on sea green leaves. Professor Sargent, the eminent dendrologist, was so struck by the beauty of this humble plant, to declare it was well worth a trip to Santa Barbara only to see it in bloom!

Pardanthus sinensis, from China, bearing in this country the misleading name of "blackberry lily," is rather common and blooming during summer.

The tuberose, *Polyanthes tuberosa*, is in every garden, and affords another instance of what could be done in the line of profitable flower culture in this privileged spot. Perfectly developed spikes of tuberoses are not a rare occurrence during winter, and could be easily had by the thousand, if anybody would turn attention to such culture.

Ranunculus in varieties are not uncommon, and do well here, where they do not receive much attention however, owing probably to having too many other flowers blooming during their rather short season.

Richardia Africana, this being the correct name of the so-called "Calla lily," stands most prominent among tuberous rooted plants. Like the blue gum and the pepper trees, callas have become quite a Californian institution, and it is doubtful if they grow with more vigour in their native country, Southern Africa. Pretty soon we are sure to have here the new yellow and pink flowered callas, and nowhere else are they likely to be brought more quickly to the greatest perfection as in California.

The showy blue-flowered *Scilla Peruviana* (a little blunder of old Father Linnæus, by the way, as it from the shores of the Mediterranean) is found in most gardens and not less frequent is the pretty and bright yellow flowered *Sternbergia lutea*, from the same region, blooming in the fall.

Of Tigridias we have very few, although most of them native of adjoining Mexico. Only one is rather common, and not very desirable, either, with lurid colored and ill-smelling flowers. *T. atrata*, I believe, from South Mexico.

Tritomas, more correctly, *Kniphophia*, the red poker plant, are rather common and very showy in all our gardens. A dwarf growing kind which I have been unable to identify, is seen in most places having the peculiarity, of blooming only during winter. Highly desirable it would be that a selection of the numerous improved varieties of this beautiful plant recently obtained were to be introduced from

Europe. They will develop here with a vigor utterly unknown there.

Tulips are not much grown in Santa Barbara, and I have been unable to ascertain whether this happens because they would not succeed well, or rather because of the same reason of "ranunculuses." The latest introduction of tulips from Palestine and Central Asia assures quite a succession of blooming also in this old fashioned flower, and we must hope to see more of them here.

Vallota purpurea is seldom seen and is much prized. Exceedingly common instead is a *Watsonia*, with dull colored flowers, and much less common another with pretty, rose colored ones, which I have not been able to identify.

This long list of bulbous plants comes to a close with the pretty *Zephyranthes*, blooming at different periods, of which we have here at least two kinds, one with white and the other with light pink flowers.

HERBACEOUS PERENNIALS.

Owing, no doubt, to the remarkably large number of woody and shrubby plants that can be had in bloom all the year round in Santa Barbara, this section of plants does not hold here such a prominent position as it does in other countries. Still it is well represented with us, and, as it would be reasonably expected, not a few of such plants never go to rest, but continue in bloom during nearly all the year. How immense and how diversified floral resources to the adornment of our gardens there are in store when taste for such plants will be more intensified, as it deserves to be!

Among native plants one has acquired citizenship in Santa Barbara, the splendid *Romneya Coulteri* (called here

the Matillija Poppy), seen in large clumps and in every garden. Less planted, but not less striking, is our scarlet Larkspur, *Delphinium cardinale*, growing wild not very far from town, while to meet with Romneya one has to travel forty miles, and over.

Among the introduced plants, a species of *Acanthus* (probably *A. spinosus*) of classical recollection, is rather plentiful, in fact more seen here than in its native country, Southern Europe.

Hollyhocks from the same region, (*Althea rosea*) are even more common, and in different colors, single and double, and blooming to perfection in every month of the year.

The sweet Alyssum (*Alyssum maritimum*) from the Mediterranean basin is spread all over even along roadsides, and blooming all winter. The yellow flowered *A. saxatile* is not so common and not such a great bloomer.

Anthirrinums, or snapdragons, in endless varieties, are common, too, and everblooming.

Another most humble European flower the common daisy *Bellis perennis* is represented by its larger double flowered forms, which do remarkably well here, while in Southern Europe they are rather difficult to manage during summer.

The genus *Campanula* is represented by different varieties of *C. medium* from Southern Europe, commonly called Canterbury bells.

Stocks (*Cheiranthus*) are common, too, and of so many different strains and varieties to defy enumeration.

The universally popular *Chrysanthemums*, are much grown in Santa Barbara, not as a pot plant, but in open ground, this climate appearing to be particularly suited to them, as shown by their blooming lasting till late in winter and in early spring, *Cineraria maritima* from the coasts of the Mediterranean, and the still whiter *Centaurea candidis-*

sima from Spain, are quite popular, both bearing their yellow flowers all through the year.

Improved forms of foxgloves, *Digitalis purpurea*, attain gigantic size here and bloom at different seasons.

Most remarkable in our gardens is a species of *Echium*, probably from the Canary Islands, with huge trusses of blue and red flowers. In a few places, some of the curious *Eryngiums*, from Mexico and South America, display the foliage of a pineapple, and the inflorescence of fennel, to which order (*Umbelliferae*) they really belong. *Gaillardias* are not uncommon, and everyblooming, too, of different strains and colors.

Quite a general favorite is *Gazania splendens* from the Cape of Good Hope, making the brightest borders one can imagine. *Geum coccineum*, from Asia Minor and Chile, is in a few gardens, and very striking with its scarlet flowers.

Several varieties of herbaceous *Hibiscus* have been introduced of late, among them a most remarkable one with lemon flowers of immense size, with dark center.

Impatiens Sultani is seen in a few places, and does not appear to be spreading much. What appears to have become popular is the red leaved *Iresine* or *Achyranthes Lindeni*, doing very well in all situations and all seasons.

In some gardens *Leptosyne maritima*, a native of our coast, is very showy with its bright yellow flowers, produced all the year round. More scarce, considered in fact as a rarity, is the odd looking *Leptosyne gigantea*, from Santa Cruz Island. This forms quite a woody trunk, six and more feet high, and branching, crowned with a feathery mass of light green finely cut leaves, from which protrude large umbels of yellow flowers, each of them nearly two inches across, and sweetly scented too. It is really wonderful how such a remarkable plant has been so little grown here up to now, and never introduced elsewhere.

The blue flowered *Linum perenne*, from Europe, is grown in few gardens only.

Lobelia erinus, from South Africa, or some improved varieties of it, are rather common; not so much the erect standing and red flowered Lobelias, of which our native *L. splendens* is considered to excel all others in beauty.

Mahernia odorata from Chile makes the most charming carpets in the open sun, and is so exquisitely fragrant.

Medeola asparagoides from the Cape, the so-called "smilax" of American florists, grows here like a weed, nearly impossible to eradicate.

From the same country and rather plentiful we have *Melianthus major*, growing nearly shrubby and very striking for its chocolate colored flowers, and more for its richly cut glaucous foliage, smelling very disagreeably when bruised.

Some varieties of Forget-me-not, *Myosotis*, are not rare: less seen perhaps is *Nierembergia rivularis* from Peru.

There are several *Oenotheras* grown in our gardens, where they bear the common name of "evening primrose," the most common being the rose or rather changeable flowered so-calied Mexican primrose, *O. rosea*.

Petunias do splendidly here as may be assumed by the new strain "Giants of California," originated by Mrs. Gould, of Ventura.

Phygelius capensis is seen in very few places up to now. Neither *Poeonias* are plentiful, although a few plants, probably of Japanese extraction, do remarkably well.

Not much attention has been paid to *Primulas* up to now; but they do much better than in Southern Europe. The recently introduced *P. obconica* appears to be quite at home, and will bloom all the year.

Pretty varieties of *Pyrethrum roseum* are to be seen in several places, and doing well.

How Mignonette, *Reseda oderata*, grows here it is impossible to describe, and without any care at all.

An exceedingly pretty plant, hardly to be classified as a perennial, is *Russelia juncea* from Mexico, so popular in European gardens, which ought to be planted more extensively here.

Scabiosas in varieties grow with the greatest vigor, and are constantly in bloom.

Several kinds of *Sedum* have been introduced, mostly from Europe, but are not so common by far as different kinds of *Mesembryanthemum* from Southern Africa. In the same line of low carpeting plants *Sempervivums* must be mentioned which are not common at all, and different kinds of *Echeveria* or *Cotyledon*, some Californian, some Mexican, some garden hybrids.

Statice limonium, in different shades of color, is quite common, and in a few gardens are beautiful clumps of *S. Halfordi*, a garden name of a variety or form of *S. macrophylla*, from Teneriffe. A species of *Stevia*, of doubtful identification, is very popular, mostly for cut flowers.

Tradescantia virginica is seen in a few gardens; *T. zebrina* and its variegated forms being much more common.

Not very plentiful there are some species of Mullein, *Verbascum*, doing remarkably well.

Verbenas are among the herbaceous plants that do better here, and are very little, if any, affected by maladies.

The garden violet, *Viola odorata*, does wonders here, its culture being much easier than in Southern Europe. If properly understood and carried on, it is sure to become very profitable for this section of the country. The pansy, *Viola tricolor* is very popular and grows to perfection here, where it will continue blooming and producing perfect flowers all summer.

The charming *Vittadinia triloba*, looking like a Liliput daisy, has been introduced only of late years and is not seen in many gardens.

More scarce than ever is the pretty *Zauschneria Californica*, so much prized in European gardens, which brightens up our hillsides during the close of summer and autumn.

ORCHIDS AND FERNS.

To bring these notes to a close a few words only are to be spoken in regard of these two classes of plants which are so much in favor in gardens of all parts of the world.

With *Orchids* very little has been done in Santa Barbara up to now; but what personal experience I have had myself in this matter has enough put in evidence that many Mexican and Central American orchids, belonging to the genera *Laelia, Lycaste, Odontoglossum* and *Oncidium* succeed and bloom to perfection in the open, that is under shelter of our evergreen oaks, provided sufficient moisture is supplied during their growing season. More delicate orchids will do better under protection of glass or cloth, and more particularly if winter blooming kinds will be needed. These I am convinced ought to pay well to grow for shipping East the cut flowers, for which taste and demand is rapidly developing all over the country.

Ferns are much more grown, although there are no large collections in Santa Barbara. Twenty or more different ferns are native of our neigborhood, and some of them are occasionally transplanted in gardens, from the stately *Woodwardia radicans* growing so rank in our cañons, to the pretty "Goldenback," *Gymnogramme triangularis* and the wiry Pellæas often affecting the most exposed places. Such exotic ferns as have been tried do remarkably well, as exemplified more particularly by tree ferns. Among these

Dicksonia antarctica from Australia and New Zealand is seen in many gardens, thriving in the open sun. *Alsophila australis* and *Cyathea dealbata*, from New Zealand, are more scarce. What can be attained here in the growing of ferns of nearly every country is shown by the huge specimens, mostly in Montecito, of *Cibotium Chamissoi* and of *Sadleria cyatheoides* imported from the Hawaian Islands.

INDEX.

A

Abutilon 45
Abelia 45
Abies 37
Acacia 40-45
Acanthus 78
Achras 33
Achania 45
Acokanthera 45
Achyranthes 79
Agave 21
Agapanthus 71
Ahuacate 27
Akebia 58
Alligator Pear 27
Allamandas 59
Aleurites 33
Aloysia 51
Althea 78
Alyssum 78
Alsophila 82
Alstroemeria 72
Amomum 72
Amaryllis 72
Ampelopsis 59
Ananas 34
Antigonon 59
Anthirrinum 78
Anemone 72
Anona 28
Arbutus 24
Artocarpus 33
Arundinaria 14
Archontophoenix 10
Arundo 19
Araucaria 37
Arauja 59
Aristolochia 59
Asparagus 59
Astrocaryum 10
Asphodelus 72
Australian Pea 62
Australian Tea 51

B

Banksia 42
Balsam 37
Bananas 16-33
Bambusa 13
Bamboos 13
Beaucarnea 23
Bella Sombra 43
Bellis 78
Berberis 45
Begonia 72
Big Tree 35
Bird of Paradise 59
Bignonia 54
Blackberry Lily 72
Blue Gum 45
Blue Palm 10
Bottle Brush Tree 51
Boston Ivy 59
Bouvardia 45
Bougainvillea 60
Boussingaultia 60
Brahea 11
Browallia 45
Breath of Heaven 48
Bridal Wreath 56
Brachychiton 41
Buffalo Berry 5
Bunya-bunya 37
Bursaria 45

C

Callis'emon 52
Carolina Jessamine 62
Cardamon 72
Campanula 78
Canterbury Bells 78
Carissa 33
Candlenut Tree 33
Carica 34
California Pepper 40
Casuarina 41
Catalpa 43
Cajanus 46
Camellia 46
Cassia 46
Cape Chestnut 32
Casimiroa 4-26
Canna 20-72
Calla Lily 20 76
Capullin 26
Carob 31
Castanospermum 31
Calodendron 32
Cereus 61
Centaurea 78
Cerimon 34
Cedrus 39
Cestrum 46
Ceroxylon 12
Ceratonia 31
Century Plant 21
Chilian Jessamine 65
China Jessamine 66
Cheiranthus 78
Chrysanthemum 78
Chinese Cherry 32
Chamaecyparis 38
Choisya 46
Chamaerops 11
Chamaedorea 10
Cherimoya 18
Cistus 47
Cinnamomum 42
Cibotium 82

Cissus 61
Cineraria 78
Clinostigma 10
Clianthus 47
Clivia 74
Cluster Fig 33
Clematis 61
Clitoria 61
Colocasia ..... 2)
Cordyline 19
Cocoanut 10
Cocos 9
Coquito 10
Corypha 12
Corchorus 47
Coulter's Pine 36
Coffea 33
Coffee 33
Convallaria 73
Cobaea 61
Cotyledon 81
Colvillea 54
Coronilla 47
Coral Tree 48
Cryptomeria 39
Crinum 73
Cruel Vine 59
Crape Myrtle 50
Cunninghamia 38
Cupressus 35
Cyphomandra 55
Cyathea 82
Cyclamen 73
Cydonia 47
Cytisus 47
Cycas 18
Cyperus 19

D

Date Palm 8
Dasyliron 23
Dammara 38
Daphne 47
Datura 47
Dahlia 73
Day Lily 74
Daisy 78
Delairea 61
Delphinium 78
Digitalis 79
Diosma 48
Doryanthes 21
Douglas Spruce 37
Dioclea 62
Dolichos 62
Dracaena 18
Dragon Tree 18
Duranta 48

E

Eccremocarpus 62
Echeveria 81
Echium 79
Elder 24
Elm 43
Eleagnus 62
Erythea 11
Eryngium 79
Erythrina 48
Escallonia 48
Eugenia 33-42
Evening Primrose 80
Euphorbia 54-48
Exochorda 48

F

Fabiana 48
Farfugium 24
Fatsia 23
Ficus 33-41-62
Flamboyant 54
Flor de Pascua 54
Flame Tree 41
Furse 75
Fourcroya 22
Foxglove 79
Forget-Me-Not 80
Frangipani 54
Freesia 75
Funkia 74
Fuchsia 48

G

Gaillardia 79
Gazania 79
Gardenia 49
Genista 49
Geraniums 52
Ginger Lily 74
Ginger 74
German Ivy 62
Gelsemium 62
Geum 79
Glycine 62
Gladiolus 74
Goldenback 82
Gorse 57
Gooseberry 24
Grape Vine 24
Grevillea 41-49
Grenadilla 30
Guavas 30
Guadalupe Palm 11
Gynerium 19
Gymnogramme 82

H

Hakea 49
Hardenbergia 49
Heliotrope 49
Hedychium 74
Hedera 63
Hemerocallis 74
Heteromeles 24
Hedyscepe 10
Hibiscus 50-79
Himantophyllum 74
Holboellia 67
Holly 50
Honeysuckle 64
Howea 10
Hydrangeas 50
Hyacinths 48
Hollyhock 77

I

Ilex 50
Impatiens 79
Ipomaea 63

Iresine.....79
Iris.....74
Islay.....24
Ivy.....63
Ixia.....75

J

Jack Fruit.....33
Jacaranda.....42
Jamboa.....33
Japanese Quince.....47
Jasminum.....63
Jessamine.....43
Juania.....13
Jubaea.....10
Juglans.....24-43

K

Kentia.....10
Kennedya.....63
Kerria.....47
Kniphophia.....76

L

Laburnum.....47
Laurel.....24
Lawson Cypress.....36
Laurus.....51-44
Lagerstroemia.....50
Lapageria.....64
Lathyrus.....64
Lantanas.....50
Laguaaria.....50
Lasiandra.....51
Lavender.....51
Lavandula.....51
Lavatera.....51
Laurustinus.....57
Laelia.....82
Latania.....12
Leucadendron.....42
Lemon.....25
Leptosyne.....79
Leonotis.....51
Leptospermum.....51
Lemon Verbena.....51
Linum.....79-54
Lilac.....56
Livistona.....12
Ligularia.....24
Litchi.....32
Libocedrus.....36-37
Lily of the Valley.....73
Lilium.....76
Lilies.....75
Lion's Tail.....51
Libonia.....51
Lippia.....51
Locust Tree.....43
Lonicera.....64
Lobelia.....80
Lycium.....64
Lycaste.....82

M

Mackaya.....51
Manzanita.....24
Macadamia.....32
Mangifera.....32
Mango.....32
Matillija Poppy.....78
Madonna Lily.....75
Mahernia.....80
Mandevilla.....65
Manettia.....65
Maurandia.....65
Matrimony Vine.....64
Madeira Vine.....61
Maples.....44
Magnolia.....42-44
Mexican Primrose.....80
Medeola.....80
Melianthus.....80
Melaleuca.....52
Melia.....43
Melon Pawpaw.....34
Mignonette.....80
Musa.....63
Monstera.....20-34
Moreton Bay Chestnut.....31
Moraea.....75
Mogorium.....63
Morning Glory.....63
Moon Flower.....63
Monterey Pine.....35
Monterey Cypress.....35
Monkey Puzzle.....38
Musa.....16
Muhlenbeckia.....65
Muliein.....81
Myo-otis.....80
Myrosma.....73
Myrtus.....52
Myoporum.....52-42

N

Nasturtiums.....68
Narcissus.....75
Nandina.....52
Natal Plum.....33
Nephrolium.....5
New Zealand Flax.....20
Nerium.....52
Nephelium.....32
Nierrenbergia.....80
Nolina.....23
Norfolk Island Pine.....37

O

Odontoglossum.....82
Oenothera.....80
Olea.....52
Oleander.....52
Olive.....25
Ombu.....43
Oncidium.....82
Opuntia.....5
Oregon Grape.....45
Oreodoxa.....12
Oxalis.....75

P

Palm Lily.....8
Pampas Grass.....19
Paper Reed.....19
Papyrus.....19
Paulonia.....43
Pardanthus.....75
Pansy.....81
Palo de Arco.....58

Passiflora.....30-65
Passion Flower.....30-65
Pandanus.....18
Pepper Tree.....39
Persea.....27
Petunia.....80
Pelargoniums.....52
Phygelius.....80
Phaseolus.....66
Physianthus.....59
Philadelphus.....53
Phylica.....53
Philodendron.....20 34
Thormium.....20
Phyllostachys.....14
Phoenix.....8
Pineapple.....34
Pircunia.....43
Pithecoctenium.....60
Pimelea.....53
Pittosporum.....53
Pinus.....35
Plumbago.....66
Plumieria.....54
Plectronia.....51
Poplar.....43
Populus.....43
Poronia.....80
Polyanthus.....76
Poinciana.....54
Poinsettia.....54
Polygala.....54
Prunus.....4-24-26
Primula.....80
Pride of California.....64
Pseudotsuga.....37
Psidium.....30
Pseudophoenix.....13
Ptychosperma.....10
Pyrethrum.....80

Q

Queensland Nut.....32
Quercus.....39-42

R

Raphiolepis.....54
Ranunculus.....76
Ravenala.....17
Reinwardtia.....54
Reseda.....80
Red Poker Plant.....76
Redwood.....35
Rhodorhiza.....54
Rhynchospermum.....66
Rhopala.....54
Rhodocistus.....47
Rhus.....5
Rhapis.....12
Ribes.....24
Richardia.....20-76
Rice Paper Plant.....23
Robinia.....43
Rock Roses.....47
Rogiera.....55
Rosemary.....55
Rosmarinus.....55
Rosa de Montaña.....59
Rosa.....68
Roses.....68
Romneya.....77
Roezlia.....22
Rose Apple.....33
Rubus.....66
Russelia.....81

S

Sago Palm.....18
Sabal.....12
Sarothamnus.....56
Sacred Bamboo.....52
Savia.....55
Sassafras.....44
Salix.....43
Sapodilla.....33
Sambucus.....24
Sadleria.....82
San Miguelito.....59
Scarlet Larkspur.....78
Scilla.....76
Schinus.....39
Sciadopytis.....39
Scabiosas.....81
Schubertia.....59
Screw Pines.....18
Sequoia.....31
Sedum.....85
Sempervivum.....81
Senecio.....61
Shepherdia.....5
Silver Tree.....42
Silk Oak.....41
Sisal Hemp.....21
Solanum.....65-67
Sophora.....44
Solandra.....66
Sollya.....67
Smilax.....80
Smilax.....67
Snail Vine.....66
Snapdragon.....78
Sparaxis.....75
Spermanna.....55
Spiraea.....56-48
Spanish Broom.....56-44
Spartium.....44-56
Stocks.....78
Sterculia.....41
Sternbergia.....76
Stigmaphyllum.....68
Stepnanotis.....63
Streptosolen.....45
St. John's Bread.....67
Stauntonia.....67
Statice.....81
Stevia.....81
Styrax.....5
Strelitzia.....17
Sutherlandia.....56
Sugar Pine.....36
Surinam Cherry.....33
Sweet Alyssum.....78
Swainsona.....56
Sweet Bay.....51
Syringa.....56

T

Tabernaemontana.....56
Tamarix.....56

Taxonia 65
Taro 20
Tecoma 57-60
Texas Umbrella 43
Teucrium 57
Thamnocalamus 14
Thunbergia 68
Thevetia 57
Tigridia 76
Tilia 44
Torch Lily 21
Toyon 24
Toxicophlaea 44
Travelers' Tree 17
Tribuna 76
Tropaeolum 68
Trachelospermum 66
Tradescantia 81
Trichostema 55
Tuberose 76
Tulip 77

U

Ulmus 43
Ulex 57
Umbellularia 28-51

V

Vallota 77
Verbascum 81
Verbenas 81
Veronica 57
Viburnum 57
Virginia Creeper 59
Vitis 24
Vinca 68
Viola 81
Violets 81
Vittadinia 81

W

Walnut 21-43
Washingtonia 8
Watsonia 77
White Cedar 36-37
Willow 43
Wistaria 62
Woodwardia 82

Y

Yellow Pine 36
Yellow Oleander 57
Yerba del Buey 61
Yucca 8-23

Z

Zapote 26
Zauschneria 80
Zephyranthes 77
Zingiber 74

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